FMI 3-35 (FM 100-17, FM 100-17-3, FM 100-17-5, and FM 3-35.4)

Army Deployment and Redeployment

June 2007

Expires: June 2009

Headquarters, Department of the Army

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Field Manual Interim
No. 3-35 (100-17, 100-17-3, 100-17-5, and 3-35.4)

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Department of the Army
Washington, DC, 15 June 2007
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***This publication supersedes FM 100-17, 28 October 1992; FM 100-17-3, 17 Mar 1999; FM 100-17-5, 29 September 1999; FM 3-35.4, 19 June 2002.**

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Preface

The purpose of this manual is to provide overarching guidance for Army deployment and redeployment operations in support of the National Military Strategy. Previously, this material was contained in four separate manuals: FM 100-17, FM 100-17-3, FM 3-35.4, and FM 100-17-5. The material has now been merged into FMI 3-35 to eliminate redundancy and to align Army deployment doctrine with joint deployment doctrine. Chapter 1 presents an overview of force projection and the deployment process; Chapter 2 spells out activities units engage in prior to being alerted for deployment; Chapter 3 outlines the procedures involved in deploying units moving from home station to the port of debarkation (POD); Chapter 4 details the process of reception, staging, onward movement, and integration (RSOI); and Chapter 5 explains redeployment.

The Transportation Coordinator's Automated Information for Movement System (TC-AIMS II) is the Army system supporting all deployments and redeployments and replaces the Transportation Coordinator Automated Command and Control Information System (TC-ACCIS). The fielding of TC-AIMS II to Army units will continue and the process outlined in Appendix B is the basis for operating and training the system.

This manual is being published as an interim edition to let the changes in installation support, theater logistics support, TC-AIMS II, and ARFORGEN solidify. In addition it was decided to incorporate the material from FM 4-01.011 into the final edition resulting in a single comprehensive guide for Army deployment and redeployment in a joint environment.

Other manuals in this series include FM 100-17-1 and FM 100-17-2 and when revised will be consolidated into a single volume and renumbered as FM 3-35.1.

Joint Publication 3-35 describes the joint process in terms of planning; predeployment; movement; and joint reception, staging, onward movement, and integration. On the other hand the Army process is defined by the phases of predeployment; fort to port movement; movement from port of embarkation (POE) to POD; and RSOI. The Army phases are nested within the joint process but are purposely separated at different points on the deployment timeline to facilitate the seam management that often hinders our deployment operations.

This publication applies to the Active Army, the Army National Guard/Army National Guard of the United States, and the United States Army Reserve unless otherwise stated.

The proponent for this publication is the United States Army Training and Doctrine Command (TRADOC). The preparing agency for this publication is the Deployment Process Modernization Office. Send comments and recommended changes to Director, Deployment Process Modernization Office, ATTN: ATZF-DP, Fort Eustis, VA 23604 or dpmo.doctrine@eustis.army.mil.

Chapter 1

Overview

The Army is transforming in an environment characterized by a wider spectrum of potential contingencies, increased uncertainty, and a more complex range of operational conditions. The situation demands swift action by the United States; consequently, key components of the Army transformation plan focus on improving strategic responsiveness and deployability. While the transformation effort is ongoing, the Army must retain its ability to respond strategically and to provide forces that are organized and equipped for global operations (figure 1-1). Through rapid strategic response, the geographic combatant commander immediately begins to neutralize the early advantages of the adversary. This race against time to establish a dominant, employable, complete spectrum military capability in the theater of operations is aimed at tipping the balance from defense to offense. Providing the capability to seize the initiative is a critical factor in the ultimate success of any joint contingency operation.

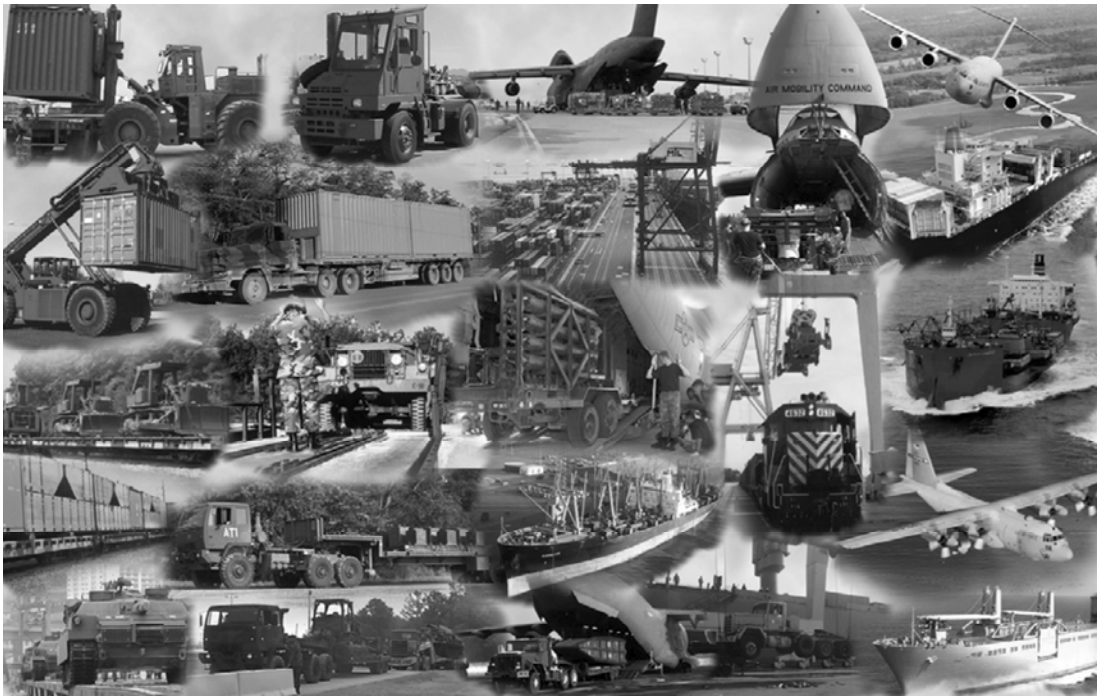

Figure 1-1. The deployment panorama

FORCE PROJECTION

1-1. Force projection is the military element of national power that systemically and rapidly moves military forces in response to requirements across the spectrum of conflict. It is a demonstrated ability to

alert, mobilize, rapidly deploy, and operate effectively anywhere in the world. The Army, as a key member of the joint team, must be ready for global force projection with an appropriate mix of combat forces, support units, and sustainment units. Moreover, the world situation demands that the Army project its power at an unprecedented pace. Therefore, the Army must be able to defuse crises early to prevent escalation through the employment of flexible, rapidly deployable forces with sufficient depth and strength to sustain multiple, simultaneous operations.

FORCE PROJECTION PROCESSES

1-2. Force projection encompasses a range of processes including mobilization, deployment, employment, sustainment, and redeployment. These processes have overlapping timelines, are continuous, and can repeat throughout an operation. Force projection operations are inherently joint and require detailed planning and synchronization. Decisions made early in the process directly impact the success of the campaign.

- **Mobilization** is the process of assembling and organizing resources to support national objectives in time of war and other emergencies. Mobilization includes bringing all or part of the industrial base and the Armed Forces of the United States to the necessary state of readiness to meet the requirements of the contingency.
- **Deployment** is the movement of forces to an operational area in response to an order.
- **Employment** prescribes how to apply force and/or forces to attain specified national strategic objectives. Employment concepts are developed by the combatant commands (COCOM) and their component commands during the planning process. Employment encompasses a wide array of operations—including but not limited to—entry operations, decisive operations, and post-conflict operations.
- **Sustainment** is the provision of personnel, logistics, and other support necessary to maintain and prolong operations or combat until successful accomplishment or revision of the mission or national objective.
- **Redeployment** involves the return of forces to home station or demobilization station.

1-3. Each force projection activity influences the other. Deployment and employment cannot be planned successfully without the others. The operational speed and tempo reflect the ability of the deployment pipeline to deliver combat power where and when the joint force commander requires it. A disruption in the deployment will inevitably affect employment.

DEPLOYMENT

1-4. Deployment encompasses all activities from origin or home station through destination, including predeployment events, as well as intra-continental United States, inter-theater, and intra-theater movement legs. This combination of dynamic actions supports the combatant commander's concept of operations for employment of the force.

1-5. The employment concept is the starting point for deployment planning. Proper planning establishes what, where, and when forces are needed and sets the stage for a successful deployment. Consequently, how the COCOM intends to employ forces is the basis for orchestrating the deployment structure. All deployment possibilities must be examined as they dramatically influence employment planning. Deployment directly impacts the timing and amount of combat power delivered to achieve the COCOM's desired effects.

DEPLOYMENT PHASES

1-6. Deployments consist of four distinct but interrelated deployment phases. A successful deployment requires smooth and rapid implementation of each phase with seamless transitions and interactions among all of them. The four phases, predeployment, fort-to-port, port-to-port, and RSOI, are not always sequential and could overlap or occur simultaneously.

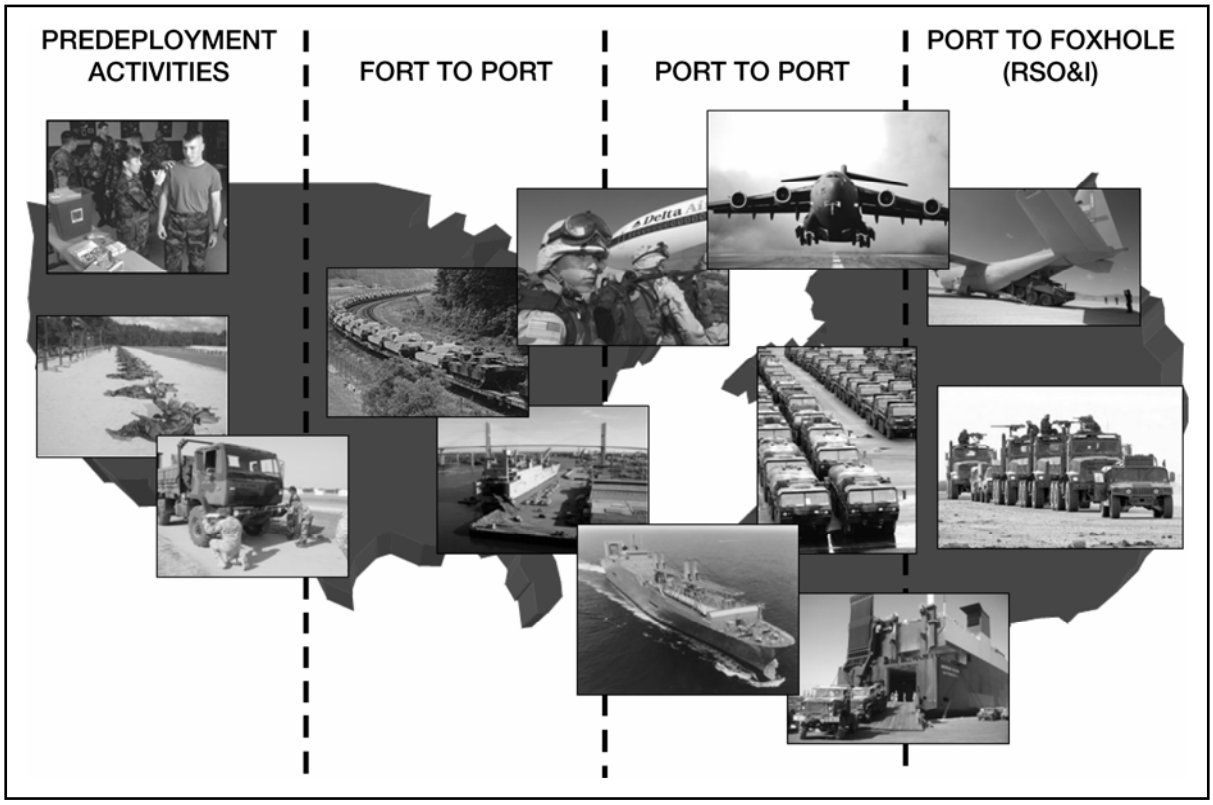

Figure 1-2. Phases of deployment

Predeployment Activities

1-7. Predeployment activities are actions taken to prepare forces for deployment. An expeditionary Army demands a vigilant watch over unit preparedness to deploy beginning with predeployment activities. When units train and exercise their predeployment activities, those activities become second-nature tasks and are accomplished efficiently. Not only should units be trained, personnel must be nearly 100 percent SRP compliant. This level of readiness and training requires school-trained, long-term unit movement officers (UMO), hazardous cargo certifiers, and air load planners as directed by Army Commands and Army Service Component Commands (ASCC). In addition, units must acquire movement expertise, knowledgeable deployment support teams, joint deployment process improvement tools, and an understanding of the Joint Operation Planning and Execution System (JOPES) to enable seamless deployment operations. The Mobility Officer (specialty 882A) Program was established to embed deployment expertise in the brigade combat teams (BCT) and these officers have demonstrated the value added from the outset.

1-8. Organizational equipment lists (OEL) and unit deployment lists (UDL) must be accurately maintained in the TC-AIMS II database. The rapid transmission of accurate deployment data into the Defense Transportation System (DTS) is critical. Accurate data serves as a measure for deployment feasibility assessments by U.S. Transportation Command (USTRANSCOM) and assures the assignment/apportionment of adequate lift. It also serves as the basis of force integration by the COCOM in overseas joint areas of operation. In turn, this integration is the foundation of effective command and control of the deployment operation. Consequently, task organized forces can be employed upon their arrival to exploit time-sensitive enemy weaknesses.

1-9. Where possible, all required deployment and movement documentation should be prepared in advance and inspected during deployment exercises and command inspections.

1-10. Installations should establish and maintain habitual relationships with all deployment support organizations: the Contingency Response Group (CRG), arrival/departure airfield control group (A/DACG), and Joint Inspection (JI) teams at aerial ports of embarkation (APOE) and the Surface Deployment and Distribution Command (SDDC) battalions at sea ports of embarkation (SPOE). It is also necessary to establish strong relationships between movement teams and the power projection platform staff.

Figure 1-3. Preparing documentation

Fort-to-Port

1-11. USTRANSCOM supports the COCOM for deployment. USTRANSCOM operates the DTS and provides common user strategic transportation. The receipt of the Air Mobility Command (AMC) air tasking order and SDDC call forward order initiates port of embarkation (POE) operations and specifies the dates on which units must arrive at the POE. Data is verified and equipment is inspected and configured for movement at the installation staging areas. Equipment is typically moved to the POEs by commercial surface transport. The installation provides supporting units to assist the deploying force, and the installation is often supplemented with the resources of a garrison support unit (GSU). A GSU is a U.S. Army Reserve (USAR) organization whose primary mission is to support mobilizing forces on an installation. Support may include load teams, pusher vehicles, maintenance teams, A/DACGs, for embark port operations, and deployment support teams. Support requirements should be identified during deployment exercises and then written into installation deployment plans.

1-12. Deploying units immediately configure for deployment with required documentation (for example, properly prepared passenger manifest, air load plans, military shipping labels, shippers' declarations of hazardous cargo, custody documentation for sensitive cargo, copy of unit equipment list, and so forth), reduce/prepare vehicles and rotary aircraft for movement, properly stow and tie down secondary loads, and construct 463L pallets and stuff containers.

1-13. The POE initiates operations to receive, stage, process, and load personnel, equipment, and vehicles onto the strategic lift platforms. SDDC verifies the resources required to accomplish the port support activity (PSA) mission and provides them from their own resources or contracts for them. Unit support requests beyond standard port operations (aircraft assembly/disassembly, convoy reception) are the responsibility of the requestor.

Port-to-Port

1-14. The port-to-port deployment phase begins with the departure from the POE and ends with arrival at the POD. During a typical deployment, personnel move by airlift, and unit equipment, vehicles, and

sustainment move by sealift. Fundamental to the success of the port-to-port movement is the ability of the theater to receive and clear transiting materiel and personnel at the required rate; that is, the flow should not exceed the throughput capacity. Sufficient in-flight refueling must be available to support the flights. Also, there must be fuel at the APOE and aerial port of debarkation (APOD). Procedures for country clearance and overflight rights, if not the agreements themselves, must be in place ready for submission at the POE.

Reception, Staging, Onward Movement, and Integration

1-15. RSOI is the process in the operational theater that supports generating combat power and delivering it to the joint force commander. The very nature of seizing the initiative demands expeditious processing of personnel and equipment throughout the deployment pipeline. Consequently, facilities for personnel and equipment reception and areas for unit staging and preparation (to include fueling) must be available on or near APOD and seaport of debarkation (SPOD) capable of 24 hour operations. Two of the essential requirements for an APOD are adequate aircraft parking and working maximum (aircraft) on ground (MOG) to meet the throughput requirements. Whether provided by theater support contracts, external support contracts (primarily the Army Logistic Civil Augmentation Program [LOGCAP]), or regionally available commercial host nation support, and/or military assets, reception support must be sufficient to immediately support the arrival of deploying units. Effective reception operations will link up personnel with their equipment while minimizing sustainment requirements for units transiting the POE. In a perfect scenario, personnel arrive and remain at the POE no longer than required, fall in on their equipment, stage, and begin onward movement. A plan to accomplish integration and maintain combat readiness must be understood, trained, and ready to implement upon arrival.

THE DEPLOYMENT PROCESS

1-16. A deploying unit undergoes a series of transformations during their movement to an area of operations (AO). Initially at its home station, personnel and equipment are separated in preparation for movement by different strategic lift modes—typically personnel via airlift and equipment by surface. Both personnel and equipment may arrive at different ports of debarkation and come together again as a combat-ready unit following the RSOI process. Experience has shown RSOI is difficult, and unprepared/untrained units find this to be the Achilles heel of their movement to the new area of operations. The manner in which the unit conducts predeployment and prepares for fort-to-port movement will have a direct impact on RSOI. Bringing the right equipment, marking and tagging equipment, proper sequencing of personnel, having and following a deployment plan, setting and meeting established timelines, and marking and packaging of hazardous materials are all elements that set the stage for a seamless transit into the new theater of operations. A detailed and integrated plan, along with a well-organized and trained team is fundamental to the success of RSOI.

DEPLOYMENT PLANNING

1-17. Successful deployment planning requires knowledge of the unit's deployment responsibilities, an understanding of the total deployment process, and an intellectual appreciation of the link between deployment and employment. Steps used in planning and preparation during predeployment activities include:

- **Analyze the mission.** The mission is examined and courses of action (COA) are developed bearing in mind that the employment considerations are paramount. The primary purpose of a deployment is to provide the right force at the right place and at the right time.
- **Structure forces.** The COAs outline the ways (employment) and the means (forces) to accomplish the mission. Initially, capabilities are identified; however, as the COAs are further defined, the requirements are being translated into type units.
- **Refine deployment data.** As forces are identified, the development of the time-phased force and deployment data (TPFDD) is begun. The supported combatant commander defines the intent for deployment which may be very specific and direct the sequence of units or just

identify a general deployment timeline. In any case, the intent should clearly express how the deployment postures the force for employment.

- **Prepare the force.** Force packages are developed, ensuring the right capabilities are in the proper combinations to meet the intentions of the supported combatant commander.
- **Schedule the movement.** The supporting combatant commands must clearly and completely define their mobility requirements and milestones based on the concept of operations. The right sequencing of forces will provide the commander with the capabilities required to achieve the desired objectives. Once the strategic lift schedule is put in motion, it is difficult to change without losing the identified transportation asset and its position in the lift schedule.

1-18. Deployment planning is a logical process focused on deploying Soldiers and equipment. The planning process results in information which provides a means to track these assets. The planning process provides details that assist the unit through an effective deployment. The heart of deployment planning is an accurate list of Soldiers and equipment being deployed—the UDL. The UDL is developed in TC-AIMS II and is validated by the commander. Its importance is exemplified by its use—to manifest units for deployment and to update the TPFDD so appropriate lift is scheduled for the deployment.

DEPLOYMENT PRINCIPLES

1-19. Four principles apply to the broad range of activities encompassing deployment:

Precision

1-20. Precision applies to every activity and piece of data. Its effect is far-reaching, and the payoff is speed. For example, precise UDLs ensure that correct lift assets are assigned against the requirement. Precision includes accurate weights, dimensions, and quantities. This degree of precision eases loading requirements and improves departure speed and safety. Precision allows units to meet the COCOM's timeline and support the COCOM's concept of employment. Bringing the application of current doctrine, realistic training, adequate support structures, and enablers together provide the framework for precision.

Synchronization

1-21. Just as a commander arranges activities in time and space to gain the desired effect during employment, deployment activities must be synchronized to successfully close the force. Effective synchronization of scarce lift assets and other resources maximizes their use. Synchronization normally requires explicit coordination among the deploying units and staffs, supporting units and staffs, a variety of civilian agencies, and other services. Realistic exercises and demanding training are paramount to successful synchronization.

Knowledge

1-22. There is a short period of time during which the deploying commander must make crucial decisions on employment. These decisions set the tone for the remainder of the deployment. Many decisions are very hard to change and have significant adverse impacts if changed; others are irrevocable. For example, knowledge and understanding of the TPFDD is imperative when making decisions on high-priority items, their sequencing, use of available time, and prioritization. Moreover, commanders must understand the entire deployment process, as well as allocating training time and placing emphasis on predeployment activities to achieve the knowledge level needed to be effective upon arrival in a new theater of operations.

Speed

1-23. Speed is more than a miles-per-hour metric. The proper focus is on the velocity of the entire force projection process, from planning to force closure. Critical elements of speed associated with force projection include—

- Agile (state-of-the-art) ports.
- Submission of accurate information.

- Safe and efficient loading.
- Embedded competency.
- Trained UMOs.
- Timely arrival of throughput enablers.
- Maintaining unit integrity.
- Delivering capability rather than entire units.
- Force tracking information.

THE TRANSFORMING ARMY

1-24. The operational environment has given the Army cause to review its organizational structure. The post-Cold War organizations met the needs of the COCOM but at an high price in organizational turbulence, inefficiency, and slower response times. The Army reorganization into brigade-based units reflects the tendency for habitual relationships between combat brigades and their supporting units and now provides a combatant commander with capable Army Forces upon their arrival in theater. The value of these relationships was demonstrated in Panama, the First Gulf War, and now in Afghanistan and Iraq.

1-25. The BCT is the primary organization for fighting tactical battles. BCTs have one of three standard designs: heavy brigade combat team, infantry brigade combat team, and Stryker brigade combat team. Each team includes battalion-sized maneuver, fires, reconnaissance, and logistic units. The newly organized BCTs can deploy more rapidly and provide the combatant commander with the capability to employ an integrated combat force sooner.

1-26. Logisticians must be prepared to support a wide range of simultaneous operations: deployment, employment, sustainment, redeployment, and refitting. The emerging modular logical organizations that will support deployment and redeployment operations are the Theater Sustainment Command (TSC), Expeditionary Sustainment Command (ESC), Sustainment Brigade with a transportation theater opening (TO) element, and the joint task force–port opening (JTF-PO).

1-27. The TSC plans, prepares, and executes command and control of operational level logistics within an area of operations. The ESC is the rapidly deployable, regionally focused, forward-based command and control element for logistics forces under the operational control of the TSC. The ESC does not represent another echelon of command but rather an extension of the TSC. In most cases, the TSC will operate from a sanctuary until the situation requires it to deploy into the theater. When this occurs, the ESC may redeploy or be assigned to another mission within the theater. The Sustainment Brigade is subordinate to the TSC as a flexible, multifunctional logistic organization and tailored to provide support to units within its assigned area of operation. Sustainment Brigades, when assigned appropriate modular units or plugs, can support a theater opening or theater distribution mission. The TO element provides staff augmentation to the ESC or Sustainment Brigade support operations section specifically to orchestrate the RSOI support and to interact with the joint distribution agencies. Refer to the Modular Force Logistics Concept, Version 6, for additional information about its organization and operation.

1-28. The JTF-PO is designed to provide the Commander, USTRANSCOM, with an Army-Air Force expeditionary capability to open a theater deployment and distribution network. The Army Force will receive forces and evaluate the port and distribution network capacities to support the campaign plan of the COCOM. The Army component of the JTF-PO is made up of movement control and cargo handling personnel.

ARMY FORCE GENERATION

1-29. Army Force Generation (ARFORGEN) is the structured progression of increased unit readiness over time resulting in recurring periods of availability of trained, ready, and cohesive units. ARFORGEN uses personnel, equipment, and training to generate forces to meet current and future requirements of combatant commanders. This cyclical readiness process allows commanders to recognize that not all units have to be ready for war all the time, and units must build their readiness over time. Units progress through the three operational readiness cycles shown in figure 1-4:

- **Reset/Train.** Units returning from long-term operations and are directed to reset/train or are experiencing significant organizational changes and are unable to sustain the ready or available levels are placed in the reset/train cycle. Active Army units typically stay in this pool for 6 to 9 months, while Army Reserve units will probably stay up to 4 years. It is during this cycle that replacement personnel arrive and are assigned additional duties, such as the UMO. Every effort should be made to schedule them for the necessary courses on post or at a TRADOC school. Examples of the courses that should be considered are the UMO Deployment Planning Course, Air Load Planning Course, and the TC-AIMS II Users Course. Once assigned and trained, the UMO should become familiar with the unit deployment plan and update the OEL.
- **Ready.** Units determined to be at a ready level are capable of beginning their mission preparation and collective training with other operational headquarters. They are eligible for sourcing; may be mobilized if required; and can be trained, equipped, resourced, and committed, if necessary, to meet operational requirements. It is during this cycle that the individual training that could not be accomplished during reset/train is completed and collective training is undertaken. A critical event that occurs during this phase is the handoff of units from the peacetime senior mission commander to the wartime commander. The handoff may involve a significant number of changes to deployment data, once the wartime commander outlines the scope of the intended mission and the OEL transitions into the unit deployment list (UDL).
- **Available.** Units are capable of conducting a mission under any combatant commander. All Active Army and Army Reserve units pass through a 1-year available force pool window. Generally, Active Army units will rotate through this pool 1 in every 3 years; Army Reserve units 1 in every 5 years; and Army National Guard units 1 in every 6 years.

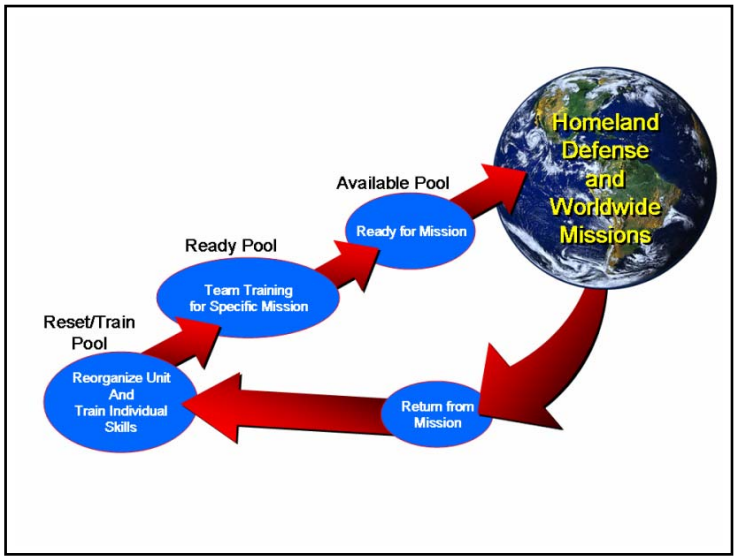

Figure 1.4. ARFORGEN cycles

1-30. As the ARFORGEN model matures there should be corresponding improvements realized in deployment and redeployment however ARFORGEN is not just about preparing units for worldwide deployments. It changes the way the Army resources, recruits, organizes, trains, equips, sources, mobilizes, and sustains whole and cohesive units on a recurring basis. The goal is to generate combat power on a sustained cyclic basis.

Chapter 2
Predeployment

The Army's effort to become more strategically responsive begins at home station. Predeployment activities are actions taken to prepare forces for deployment and are not limited to the deploying unit but include supporting units and the installation staff. The units' primary predeployment activities include planning, document preparation, and training. It has been noted during Deployment Excellence Award team visits that the units achieving the most success in deploying are those which the commanders are directly involved in the preparations; transportation documentation is maintained, and training is ongoing. Deployments are a function of dedicated personnel attention to detail and following the guidelines in regulations, doctrine, and other related source material.

PLANNING

2-1. The deliberate deployment planning process begins with the COCOM validating the capabilities necessary to support the contingency plan. The Secretary of Defense and the joint staff review the requirements to determine if they are valid. Joint Forces Command passes the requirements to the appropriate Service provider to task units to furnish the requested capabilities. Unit commanders and staffs analyze the requirement and determine the personnel and equipment resources necessary to accomplish the stated mission. The process may transpire over the period of several months if time allows for deliberate planning to a matter of days or even hours for crisis action planning.

DEPLOYMENT PLANNING

2-2. Deliberate planning is typically used where the deployment and employment of forces is in response to anticipated contingencies. It is designed to produce a detailed operational plan for a hypothetical situation and relies heavily on a number of assumptions ranging from the threat to anticipated host nation support. Conversely, crisis action planning is accomplished in response to time-sensitive, imminent threats that may result in actual military operations. The plan is based on circumstances existing at the time planning occurs. In either situation, deliberate or crisis planning, prescribed procedures are followed to formulate and implement a response. Deployment planning is a key element of both deliberate and crisis action planning and aims at delivering the right force, at the right place, and at the right time.

2-3. Planning for deployment is based primarily on mission requirements and the time available to accomplish the mission. During deployment operations, supported combatant commanders are responsible for building and validating movement requirements; determining predeployment standards; and balancing, regulating, and effectively managing the transportation flow. Supporting combatant commands and agencies source requirements not available to the geographic combatant commander and are responsible for verifying supporting unit movement data; regulating the support deployment flow; and coordinating effectively during deployment operations. The JOPES directives, guidance, and decision support tools serve as a common framework within the Joint Planning and Execution Community (JPEC) to facilitate the deployment planning processes.

2-4. JOPES is the integrated, joint command and control system used to support military operational planning, execution, and monitoring activities. JOPES incorporates policies, procedures, personnel and systems, and underlying Global Command and Control System (GCCS) information technology support to provide senior-level decision-makers and their staffs with enhanced capability to plan and conduct joint

military operations. JOPES provides the mechanism to submit movement requirements to lift providers in the form of a TPFDD. The TPFDD is both a force and a transportation requirements document.

TIME-PHASED FORCE AND DEPLOYMENT DATA

TPFDD is the JOPES data-based portion of the operational plan; it contains time-phased force data, nonunit related cargo and personnel data, and movement data for the operational plan including:

- In-place units.
- Units to be deployed to operational plan with a priority indicating the desired sequence for their arrival at the POD.
- Routing of forces deployed.
- Movement data associated with deploying forces.
- Estimates of nonunit related cargo and personnel movements to be conducted concurrently with the deployment of forces.
- Estimates of transportation requirements, which are fulfilled by common user lift resources, as well as those requirements that can be fulfilled by assigned or attached transportation resources

2-5. The geographic combatant commander begins preparation of COAs based on taskings received from the Chairman, Joint Chiefs of Staff (CJCS). Combatant commanders receive taskings through the Joint Strategic Capabilities Plan (JSCP) for deliberate planning or guidance through a CJCS warning order during crisis action planning. These directives establish command relationships, identify the task/mission, and provide any planning constraints. In addition, these directives will either identify forces and strategic mobility resources and establish tentative timing for execution, or request the supported combatant commander to develop these factors.

2-6. Force requirements are initially identified in the planning process during mission analysis and COA development. Force composition is derived from the troops apportioned for deployment/employment planning and the supported combatant commander's need for a particular unit capability to accomplish the mission.

2-7. COAs outline the scheme of employment and force requirements to accomplish the assigned mission. The Services monitor development of COAs and begin planning for support forces, sustainment, and mobilization, if required. As force requirements are identified, TPFDD development commences for each COA. The supported combatant commander normally publishes a TPFDD letter of instruction (LOI) with planning guidance, procedures, and coordinating instructions. The intent of the supported combatant commander's TPFDD LOI is to eliminate confusion, facilitate parallel planning, and expedite TPFDD refinement by providing commands, supporting commands, and agencies with a single set of instructions for input and management.

2-8. It is at this point that USTRANSCOM begins a series of force flow conferences to review the proposed COAs, and in coordination with the supported combatant commander, prepares deployment closure estimates. As detailed planning continues after COA selection, force refinement begins with consideration of the forces and time available, identification of needed unsourced force capabilities, understanding of the anticipated operational environment, and consideration of the actual constraints (for example, political, geographic, or resource) imposed as part of the assigned mission.

2-9. Once force requirements are identified, selected forces must be organized and time-phased to support the concept of operations. Time phasing is the sequencing of the deployment and includes the dates of movement as well as the mode of transportation and transportation nodes through which the force will flow. It is based on the organization of forces to accomplish the mission, the commander's intent, the estimated time required to deploy forces from their point of origin to the final destination, and actual lift capacity and port throughput. In addition to forces, support personnel, equipment, and sustainment are time-phased to support the continuous operation of the joint force until the mission is accomplished.

2-10. All movement priorities and phasing are based on the supported COCOM's required date for the deploying force capability. Movement data on the required delivery date, time phasing of forces, and materiel is documented in the TPFDD. Ideally, forces and supporting materiel are time phased in a manner that allows the combatant commander to conduct decisive operations as quickly as possible. The COCOM must be able to track forces flowing into the theater to make the decision on when decisive operations can be initiated.

2-11. Finding the proper balance between projecting the force rapidly and projecting the right mix of combat power and materiel for the ultimate mission is critical. The commander must seek a balance of protection, efficient deployment, adequate support, and a range of response options to the threat. The availability of mobility assets is most often a constraining factor, so difficult trade-off decisions continuously challenge supported commanders.

2-12. Flowing forces in accordance with a TPFDD results in the delivery of sequenced force packages to the combatant commander and makes the best use of the apportioned strategic lift, while at the same time providing situational awareness of arriving forces to the COCOM. During recent deployments supporting Operations Enduring Freedom and Iraqi Freedom, operational requirements and force flow decisions resulted in TPFDD sequence adjustments via requests for forces (RFF). In addition, revised or updated deployment orders (DEPORD) were used to alert and move affected units. The joint staff and services are developing future systems to provide the necessary agility to accomplish such real-time adjustments to the complex problem of revising the TPFDD flow during execution.

2-13. USTRANSCOM analyzes TPFDDs for transportation feasibility in conjunction with the supported combatant commander during the planning process. Analysis is conducted using models, simulations, and transportation expertise. Dependable strategic transportation feasibility analysis depends on accurate combatant command analysis of theater transportability.

2-14. The objective of TPFDD maintenance is to systematically and effectively incorporate required changes to the TPFDD in a standardized manner at defined intervals after the TPFDD becomes effective for execution. It is essential that units maintain current data to ensure then JOPES database is accurate. Units resubmit changes through their standard process.

MOVEMENT PLANNING

2-15. To meet contingency support requirements, units develop deployment movement plans and standard operating procedures (SOP). An effective movement plan contains sufficient detail to prepare units to execute strategic deployments while the SOP outlines functions that should initiate actions upon notification of a unit movement. In addition to movement plans and SOPs, units maintain movement binders and battle books containing movement information and instructions.

Deployment Movement Plans

2-16. Deployment movement plans define responsibilities, functions, and details for each part of a unit deployment from origin to reception in theater. There may be more than one deployment plan required depending on the number of contingencies/operations plans (OPLAN) the unit must prepare to support. Movement plans are written in a five-paragraph OPLAN format. Refer to FM 4-01.011 for a sample plan.

2-17. GCCS is the system used to manage deployments. Deployment related information is contained in the GCCS database and is accessible through GCCS ad hoc queries or via JOPES, a GCCS application.

2-18. Units deploying under a JOPES OPLAN must increment their movements consistent with OPLAN TPFDD requirements, as delineated by ULNs. At the predeployment conference the unit requests a ULN for each element. The Army Command or ASCC assigns ULNs to units. It is essential that deploying units use the correct ULN for equipment scheduled for movement at the right time by the correct mode. Using the correct ULN is key to the JOPES database validation process. An incorrect ULN could overstate or understate airlift requirements and delay passenger and cargo movements.

2-19. Unit line numbers available on JOPES OPLAN reports divide the unit by transportation mode, ports of embarkation or debarkation, and dates. Dates correspond to the established C-day for the designated plan TPFDD. The unit movement is phased by the following dates relative to C-day:

- **Ready-to-load date (RLD).** The date in the TFPDD when the unit will be prepared to depart its origin.
- **Available-to-load date (ALD).** The TPFDD specified date when the unit will be ready to load on an aircraft or ship at the POE.
- **Earliest arrival date (EAD).** A date specified by the supported combatant commander that is the earliest date when a unit, a resupply shipment, or replacement personnel can be accepted at a POD during a deployment. It is used with the latest arrival date to define a delivery window for transportation planning.
- **Latest arrival date (LAD)**. A date specified by the supported combatant commander that is the latest date when a unit, sustainment, or replacement personnel can be accepted at a POD and support the concept of operations. It is used with the earliest arrival date to define a delivery window for transportation planning.
- **Required delivery date (RDD).** A date when a unit must arrive at its destination and complete off-loading to properly support the concept of operation.

2-20. The transportation component commands (TCC) schedule lift against the ULN to meet the EAD-LAD window. AMC publishes airflow schedules to call forward personnel and equipment to the APOE. These schedules are in GCCS. The call forward schedules are movement directives that specify when units must have their equipment at the POE to meet available-to-load dates. Based on these schedules, deploying units and intermediate command levels backward plan movements to the POE to meet the ALD. Movement directives (if published) provide windows by mode for cargo arrival at the POE.

INFLUENCING DEPLOYMENT

At the outset of the deployment planning cycle, a battalion commander develops a concept of deployment. Unit line numbers (ULN) identify unique unit movement increments; for example, by deciding that the unit should be divided into an advanced party, main body, trail party moving by air, and the equipment by sealift, four ULNs are created to sequence the segments in the TPFDD—one for each increment or mode. The ULN becomes the means of identifying the deploying unit, beginning with the request for transportation through arrival in the theater. The UMOs must fully understand the deployment concept and be able to explain it at planning conferences. The commander and UMO must then ensure that the correct data is used in building the unit deployment list (UDL). Bad data frequently leads to frustrated cargo, delays, and lack of visibility.

Developing a Deployment Movement Plan

2-21. The following paragraphs describe a recommended step-by-step process for developing deployment movement plans:

- **Identify what needs to be moved.** Based upon mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC) and command guidance, deployment planning must reflect personnel, equipment, supplies, and how the unit will accomplish the move. For planning purposes, units plan to deploy with assigned personnel and on-hand equipment. Upon execution, the plan may need to be modified if additional personnel are assigned or equipment cross-leveled to bring the unit to the required readiness level. Units should plan to move their basic load of supplies to sustain their operations upon arrival in the theater. The quantities to be deployed are normally defined in OPLANs, unit or Army Command SOPs, or ASCC instructions. The UMO must have a detailed listing of each piece of equipment to be deployed based on the automated unit equipment list (AUEL). All outsize, oversize, overweight, or hazardous equipment/cargo must be identified, as it will require special considerations.

- **Identify equipment to accompany troops.** Yellow to accompany troops (TAT) equipment must accompany troops and be accessible enroute. Examples include Class I basic load items, individual carry-on baggage, and weapons. For personnel traveling via commercial air, this is generally only the baggage that will fit under the seat. Red TAT items must be available at the destination before or upon unit arrival. This equipment may be sensitive cargo that requires special security or handling at the POE or POD. Red TAT must be unitized/palletized and reported on the AUEL/deployment equipment list (DEL). Not to accompany troops (NTAT) equipment is normally shipped by surface and does not accompany the troops. It consists of all other equipment required by the unit to perform its mission.
- **Identify what needs to move by air.** This could include personnel, advance parties, baggage, and some equipment. The balance of equipment normally moves by sea. For deployments supporting combatant commander OPLANs/operation orders (OPORD), the TPFDD will designate the strategic movement mode.
- **Identify hazardous (also sensitive and classified cargo) for packaging, labeling, segregation, and placarding for movement.** Codes of Federal Regulation (CFR) 49 Transportation provides guidance on the packaging, labeling, placarding, and movement of hazardous materials.
- **Develop vehicle load plans for unit equipment.** Equipment that cannot be loaded on organic vehicles should be planned for movement by other means (container, commercial rail or highway, or military assets). Vehicle load plans are recorded on DD Form 1750 (*Packing List*) for organic vehicles and trailers carrying secondary loads. FORSCOM units may use FORSCOM Form 285-R (*Vehicle Load Card*) for preparing vehicle load plans. The installation transportation officer (ITO) is the installation point of contact (POC) for obtaining commercial transportation to move equipment to POE that is beyond the unit's organic capability. Unit cargo (vehicles and equipment) is prepared for shipment according to the mode of transportation. Depending on the strategic lift full reduction may or may not be required. Reduction details are normally in the SDDC port call message or the operations order for sealift. For deployment by air, reduction is determined by type of aircraft. Transportation Engineering Agency (TEA) Pamphlet 55-24 provides guidance for preparing vehicles for airlift. Vehicle modifications (that is, shelters, bumper modifications, and so forth) made by the unit which change the vehicle configuration/dimensions/weight normally must be approved by the unit's Army Command/ASCC and ultimately by TEA. Vehicle modifications must be reflected on the AUEL and DEL. Information on dimensions, weights, and cubes for all Army equipment is in CD-ROM and World Wide Web versions of TB 55-46-1. The hard copy version only contains major end items.
- **Identify BBPCT requirements.** All crates, containers, boxes, barrels, and loose equipment on a vehicle must be blocked, braced, and tied-down to prevent shifting during transit. The POC for blocking and bracing requirements is normally the unit movement coordinator (UMC). Chapter 6 of FORSCOM/ARNG Regulation 55-1 describes policy for obtaining and stocking blocking, bracing, packing, crating, and tie-down (BBPCT) materials and related railcar loading equipment for deploying units. FM 4-01.011 provides guidance for securing loads moving by air, and FM 55-17 provides guidance for securing loads by other modes. Additional tie down guidance is in TEA Pamphlet 55-19 and TEA Pamphlet 55-20.
- **Translate what needs to be moved into transportation terms.** Personnel and equipment data are translated into transportation terminology as unit movement data (UMD) and recorded on the OEL. Upon deployment execution, units use TC-AIMS II to update the OEL and create the DEL. The UMC provides assistance to deploying units for OEL updates and DEL development.
- **Determine how the personnel and equipment will move to the POEs.** In continental United States (CONUS) wheeled vehicles and tracked vehicles move via commercial rail, truck, or barge. Unit personnel usually move to the POE by military or commercial buses. Army rotary wing aircraft normally self-deploy to the POE, where they will be disassembled for shipment.
- **Prepare the unit deployment plan.** The administrative, logistical and coordination requirements for the plan must be determined. Items such as enroute medical, messing, and maintenance for movement to POEs must be coordinated and documented.

- **Maintain the movement plan.** Update the OEL as changes occur in the OPLAN, equipment, commander's intent, or upon mission execution. The OEL is used to produce the unit's equipment manifest and military shipping labels (MSL), and errors can result in the unit's equipment being lost in the transportation system.

Installation Readness SOP

2-22. Each installation normally has a readiness SOP that outlines the local procedures in place to be used by the staff, deploying unit, and support elements in the different stages of the deployment process.

Unit Movement SOP

2-23. The unit movement SOP should be in enough detail to define the day-to-day as well as alert functions. The SOP defines the duties of subordinate units/sections that will bring the unit to a higher state of readiness. These duties can be written in separate annexes that can be easily separated and issued to leaders for execution. Functions addressed in the SOP could include unit property disposition, supply draw, equipment maintenance, vehicle and container loading, security, marshaling procedures, purchasing authorities, unit briefings, in-transit visibility (ITV), and other applicable deployment activities.

Deployment Binders

2-24. In addition to the unit movement SOP, units will maintain deployment binders containing the unit deployment plan, appointment orders, training certificates, recall rosters, a current OEL, and copies of load cards and container packing lists. Units will also maintain prepared copies of transportation requests, convoy movement requests and special handling permits, and BBPCT requirements.

2-25. The preferred method for deploying forces by sea is to use the roll-on/roll-off (RO/RO) ships of the Military Sealift Command (MSC) and the commercial RO/RO ships that may be available. However, the limited availability of these ships and the dominance of containerships in the U.S. flag and owned merchant fleet require that the Army be capable of using containerships with commercial or military containers. COCOMs should identify the necessary support forces to support container reception, staging, onward movement, or retrograde. Planning is essential for effective use of containers. Units should know what equipment can be containerized, how to prepare equipment for containerization, the number of containers required, and have load plans prepared.

Battle Books

2-26. The battle book documents how the commander accomplishes the mission in the specified area of operation. It should include the organization and responsibilities for the unit's RSOI in the theater. The following items, if applicable, should be included in the battle book: pertinent information from the OPLAN and the TPFDD; information and photographs/schematics concerning the layout and facilities of railheads, staging areas, APODs and SPODs; maps of convoy routes within the area of operation to its employment location; and plans and locations for drawing pre-positioned equipment.

TRAINING

2-27. Unit deployment training is an essential element in developing the mental agility and knowledge required for strategic responsiveness. Training is a proven way for units and individuals to acquire and improve the skills required to increase the speed of projecting combat power. The Department of the Army established the Deployment Excellence Award (DEA) to recognize Army units and installations for outstanding deployment accomplishments including deployment training. A common characteristic among the successful units has been the command emphasis on individual and collective deployment training. The Army is implementing the Army Force Generation (ARFORGEN) process designed as a cyclic training and readiness strategy to generate trained and ready modular expeditionary forces. Training is a pillar of ARFORGEN, and the association between them is discussed in subsequent paragraphs.

COLLECTIVE TRAINING

2-28. Units train in peacetime to meet unit and individual training requirements for deployment operations. Deployments can occur rapidly leaving the deploying unit with little or no time to correct training deficiencies. The objective of collective deployment training is to implant the knowledge, skills, attitudes, and abilities so it becomes a reflex activity executed with precision. Units must identify deployment as a mission essential task, annotate it on their mission-essential task list (METL), and gain proficiency. Many Army training programs offer the opportunity to include deployment training in major training events.

2-29. Emergency deployment readiness exercise (EDRE)/sealift emergency deployment readiness exercises (SEDRE) events are designed to exercise unit or command movement plans for deployment. EDREs/SEDREs may involve the unit moving to POEs and loading unit equipment on strategic sealift/airlift assets. Army Command, ASCC, installation, and brigade level commands normally have SOPs and/or deployment regulations and policies establishing subordinate unit required activities in notification hour (N-Hour) sequence for deployments. These documents guide unit activities during EDREs/SEDREs.

DEPLOYMENT TRAINING

2-30. Units with deployment missions are required to have an appropriate number of personnel trained to perform special deployment duties. These duties include unit movement officer, unit loading teams, hazardous cargo certifying officials, and air load planners. Army Commands and ASCCs have specific policies for appointing and training personnel to assume these positions, and this is a synopsis of the more important ones.

Unit Movement Officer

2-31. The commander is responsible for all aspects of deployment preparation, training, and execution, and the UMO is the commander's designated representative. The UMO should be a graduate of a resident Unit Movement Officer Planning Course, appointed on unit orders, and have at least twelve months retention in the unit. In most cases, a unit movement noncommissioned officer (NCO) may augment the UMO. Commanders should consider retention in selecting UMOs and unit movement NCOs.

Figure 2-1. Deployment planning

Loading Teams

2-32. Units must have personnel trained in vehicle preparation and aircraft and rail loading/unloading techniques (figure 2-2). The type and quantity of equipment to be loaded and the time available for loading determines the composition of the team. Training is arranged through the installation UMC, and once training is completed, the load teams are put on unit orders.

Figure 2-2. Rail loading

Hazardous Cargo Certification

2-33. Each unit is required to have at two individuals to certify hazardous cargo. The hazardous cargo certifying official is responsible for ensuring the shipment is properly prepared, packaged, and marked. The certifying official is also responsible for personally inspecting the item being certified and signing the HAZMAT documentation. Hazardous cargo certifiers must be trained at a Department of Defense (DOD) approved school on applicable regulations for all modes within the past 24 months. Upon training completion, they are authorized to certify documentation for commercial and military truck, rail, sea, and air. A common mistake occurs when the HAZMAT certifier is sent with the advance party leaving no one to accomplish the HAZMAT inspections during departure operations.

Air Load Planning

2-34. Air load planners are trained at Air Mobility Command (AMC) sanctioned courses to prepare, check, and sign unit aircraft load plans (figure 2-3). Upon course completion, the individual is authorized to sign load plans; however, they must be approved by an Air Force loadmaster. The resident course is taught at the U.S. Army Transportation School but similar courses are conducted at CONUS and outside the continental United States (OCONUS) locations.

Figure 2-3. Air load planning

ROUTE AND LOCATION RECONNAISSANCE AND REHEARSAL

2-35. Reconnaissance of the route of the POEs and to predesignated POEs should be done periodically. It may be accomplished through passive means such as map surveillance or, optimally, through site visits. Walking the terrain at the power projection platform and designated port facilities allows commanders to understand space limitation, see choke points, survey facilities, understand the simultaneous nature of the operation, and visualize the deployment operation. Terrain walks can be useful as a unit level activity but are more beneficial when they involve all participating and supporting units.

2-36. Fort-to-port rehearsals are key factors to reducing deployment times. Rehearsals validate deployment plans and permit commanders and unit movement officers to see possibilities and limitations. The physics of the operation can become plainly evident.

INSTALLATION SUPPORT

INSTALLATION SUPPORT

Installations are an integral part of the deployed force from home station to the foxhole. Operational deployments and rotational assignments across the globe mean installation capabilities will transcend more traditional expeditionary support requirements associated with mobilizing, deploying, and sustaining the force. More than a jump point for projecting forces, installations serve a fundamental role in minimizing their footprint through robust connectivity and capacity to fully support reach back operations.

Installation facilities must readily adapt to changing mission support needs, spiraling technology, and rapid equipment fielding. Installation connectivity must also support en route mission planning and situational awareness. Education and family support will use the same installation support connectivity to sustain the morale and emotional needs of our Soldiers and their families.

United States Army White Paper -- *Serving a Nation at War*

2-37. The U.S. Army Installation Management Command (IMCOM) manages Army installations worldwide. IMCOM and its garrison commanders play a critical role in ensuring successful mobilization, demobilization, and force projection operations in CONUS and OCONUS. Garrisons participate in deployment training programs, deployment operations, and are instrumental in supporting reach-back operations during unit deployments.

2-38. In CONUS, the installation transportation officer (ITO) is a pivotal participant in the force projection process providing links to FORSCOM and USTRANSCOM services, commercial integration, power projection platform operational expertise, and planning support. The UMC is appointed by the ITO to—

- Assist and monitor unit movement plans, data, and documentation.
- Coordinate transportation requirements with the supporting commands for movement from home station/mobilization station to POEs.
- Request strategic lift from USTRANSCOM.
- Source unit deployment information and data using TC-ACCIS or TC-AIMS II.
- Provide technical assistance and monitor deployment training.
- Coordinate requests for convoy clearances and special hauling permits with state highway authority and the defense movement coordinator.
- Arrange for and monitors the status of commercial and military shipping containers and 463L pallets.
- Report movement of units as directed.
- Advise unit commanders/organizations on identifying and obtaining equipment in support of unit deployments, to include BBPCT materials.

2-39. At OCONUS locations, a combination of units (IMCOM, the Army Command, ASCCs, support brigades, and movement control battalions) will come together to perform the deployment support functions of the CONUS ITO.

2-40. The commander appoints a UMO to prepare the unit for deployment. The UMO must know the unit's mission and the commander's intent to prepare the unit for deployment, so appropriate coordination, planning, and execution can take place. The UMO will—

- Assemble and maintain unit movement plans and documentation.
- Prepare the unit for movement.
- Create the unit equipment list.
- Supervise the load out of the unit.

INSTALLATION DEPLOYMENT PROCESSING SITE

2-41. The installation deployment-processing site (figure 2-4) is a centralized location where deploying units process and assemble their equipment for movement to the POE. Deploying units begin preparing their equipment for deployment in unit marshaling areas and motor pools. Activities include preparation of required documentation (for example, transportation control and movement documents (TCMD), MSLs, hazardous cargo, vehicle preparation, preparation of sensitive cargo, building 463L pallets, and containerization of equipment.

2-42. Based on local deployment procedures, the equipment may then move from the unit marshaling areas to a central staging area on the installation for further processing. The name for these staging areas may differ between installations (that is, installation staging area, alert holding area, deployment ready reaction field, and transportation inspection point); however the functions performed to prepare units for movement are essentially the same.

2-43. Units are sequenced by chalks or equipment type upon arrival at the deployment-processing site. Stations are setup by equipment type and in the notional site depicted above would use the following sequence to inspect the vehicles:

- Station 1. Conduct initial inspection for general condition of vehicle; perform a preliminary check of documentation; verify dimensions.
- Station 2. Inspect documentation for accuracy; ensure military shipping labels are accurate; ensure MSLs and radio frequency (RF) tags are applied properly; check documentation and location of HAZMAT, if appropriate; inspect secondary loads for documentation and ensure the loads are adequately secured.
- Station 3. Conduct thorough maintenance inspection of vehicles.

- Station 4. Fuel/refuel vehicles.
- Station 5. Verify completion of stations 1-4; direct vehicles to proper staging area.

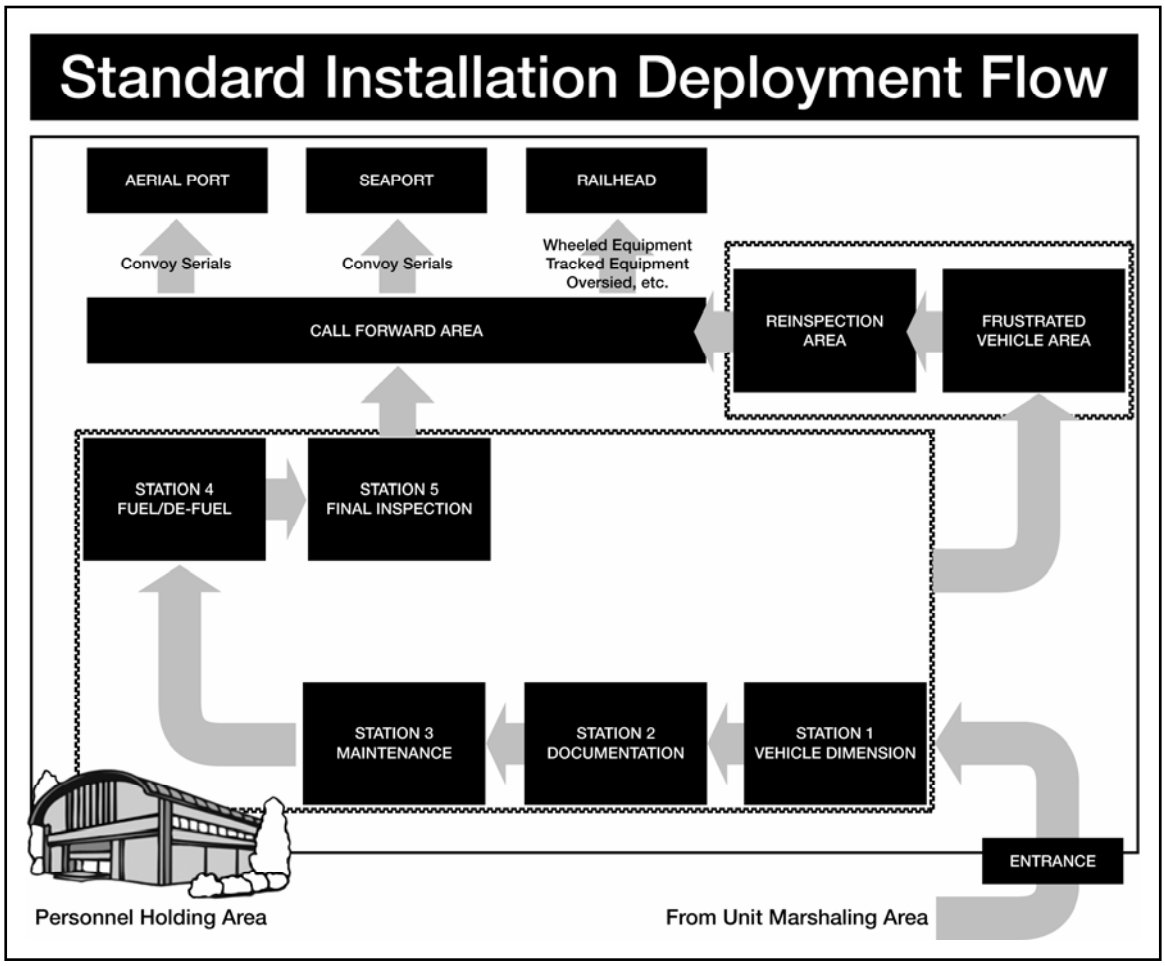

Figure 2-4. Installation Deployment Processing Site

2-44. Any item failing to meet the standard is held in the frustrated vehicle/cargo holding area until the deficiencies are corrected or a replacement is provided. When the established preparation standards are met, the equipment is sequenced for loading or convoy. Prior to leaving the deployment-processing site, the UMO will update their OEL with corrections to equipment weights, dimensions, and loads, resulting in the UDL. Accuracy is paramount as the UDL is the document deployment planners use to apply the limited strategic lift resources against deployment requirements.

Chapter 3

Deployment: Fort-to-Port

The Army and deployment operations are no strangers. The World War I American Expeditionary Forces experienced deployment, as did the Allied Expeditionary Force of World War II. Throughout its history, the Army has executed a wide array of deployments. During the Cold War, the Army knew where it was going to fight and pre-positioned equipment in the theater to satisfy the requirement. The situation facing the Army today is very different—the uncertainty of deployment locations, the likelihood of austere operational conditions, and the requirement to fight soon after completion of minimal RSOI presents significant challenges for the foreseeable future.

NOTIFICATION

3-1. The predeployment activities discussed in the previous chapter form the underpinning for successful deployment. Once the deployment notification is issued, the luxury of time is lost. The planning must be completed, the support network must be trained and in place, and the deploying unit must be prepared to execute its deployment plan.

INITIAL NOTIFICATION AND WARNING ORDER ACTIVITIES

3-2. The CJCS publishes a formal warning order to prepare for possible military response to a crisis situation. The force provider/Army Command then alerts the deploying units and installations with a warning order. Following receipt of the order, the unit determines its deployment readiness status and begins updating personnel and equipment status and deployment documentation, plans, and procedures. The installation adjusts their plans and procedures to support the anticipated deployment and notify the elements (personnel, supply, maintenance, transportation, and training) that are required to support the deploying unit. Based upon SDDC port call message or an AMC airflow message, the installation publishes schedules for movement to POE.

ALERT ORDER ACTIVITIES

3-3. The force provider/Army Command passes a detailed alert order to its subordinate elements. If not already provided, the Army Command receives the project code that allows units to commit resources toward the deployment. To improve its readiness posture, the deploying unit cross-levels equipment and submits requisitions for unit basic load and other needed supply classes. The filling and receipt of supplies is dependent upon the deployment timeline and availability of stocks. The unit also requests supplies to support movement operations (BBPCT, dunnage, containers, and 463L pallets). The unit verifies that assigned ULNs are consistent with the unit's movement increments (for example, main body, advance party) for deployment. The unit also verifies equipment status compared to the UDL and updates load plans, equipment dimensions and weight, and shipper's declaration of dangerous goods. Once corrections are made, the unit prints and applies MSLs (DD Form 1387, *Military Shipping Label*) and attaches RF tags. Additionally, identify equipment as yellow TAT, red TAT, or equipment that does not have to accompany troops (NTAT). Yellow TAT accompanies the troops, must be accessible enroute, and includes class I and individual carry on baggage and weapons. Red TAT must be available upon arrival and includes chemical, biological, and radiological equipment. The unit finalizes the UDL as early as possible.

AMMUNITION BASIC LOAD

Typically units deploy with a limited ammunition basic load (ABL) and the bulk is issued upon arrival in theater. The 101st Airborne Division was directed to deploy to Operation Iraqi Freedom (OIF) 1 with 100 percent of its ABL, presenting deployment planners with a unique set of challenges. Crane Army Ammunition Activity in Indiana was selected as the consolidation and packing site. The ammunition specialists at Crane developed an estimate of the number of containers based on the classes of ammunition. In addition, the division mobility officer coordinated with the Crane ammunition specialists to ensure that the correct mix of ammunition classes were packed and shipped to coincide with the division's force packages. This estimate was used by the 101st Airborne Division planners to refine their stow plans. Once the ammunition was packed in containers, it was trucked to the Port of Jacksonville, FL to marry up with the 101st equipment and be loaded. Jacksonville, being a civilian facility, had no ammunition storage facilities and could only accept and load ammunition after 1800 hours, and the ship had to leave the dock by 0630 hours the next morning. The 48 hour trip from Crane to Jacksonville and the narrow loading window at the port made it difficult for Surface Deployment and Distribution Command to synchronize the truck arrival with the port operations. SDDC made arrangements for a site near the port where the ammunition containers could be staged and brought forward in a timely manner. Once the system was put in place, the ammunition containers were moved to Jacksonville and were loaded with the designated force package.

3-4. The unit commander briefs key personnel concerning the mission, threat, task organization, movement plans, and the Status of Forces Agreement, force protection, and geopolitical situations. Additionally, the commander or a representative should brief family members on the availability of family support activities.

3-5. If not previously provided by the Army Command, the deploying unit activates derivative Department of Defense Activity Address Code (DODAAC) and derivative unit identification code (UIC). The UMO finalizes lift and load plans, shipping documentation, and convoy clearances as secondary loads and pallets are built and containers are stuffed.

3-6. The installation initiates the support for the deploying unit based on established policies and procedures. The installation publishes schedules for movement to the POE based on the SDDC port call message or an AMC airflow message. Designated activities prepare to provide support based on the installation SOP.

MOVEMENT TO THE PORT OF EMBARKATION

3-7. Movement to POE activities normally begin with Army Command receipt of an execute order. The order, along with any additional guidance is forwarded to the appropriate subordinate commands, deploying units, and installations. SDDC issues a port call message that identifies the date the unit must have their equipment at the POE to meet the available-to-load date. The port call message or the operations order for sealift will also normally include details for vehicle preparations and reducing their cubic dimensions. AMC enters the APOE and airflow scheduling information into Global Transportation Network (GTN). Scheduling information is also available in the JOPES. Based on port call messages and air schedules, the organization backward plans movements to the POEs. Deploying unit equipment normally moves from unit marshaling areas to a central staging area on the installation for further processing. The name, organization and responsibilities for these installation level staging or marshaling areas may differ; however, the functions performed to prepare units for movement are essentially the same.

3-8. Each power projection platform (PPP) has an associated strategic aerial port and/or seaport. The proximity of the port facilities to the PPP determines the type of movement and the numbers and types of assets required to complete the movement to the port. In some cases, the distance to APOEs and SPOE is short, allowing units to maximize the use of organic equipment and convoys. In other cases, the distance to the APOE or SPOE is longer; in which case, units may have to rely heavily on commercial road and/or rail transport to complete the move to the port.

IN-TRANSIT VISIBILITY

3-9. In-transit visibility preparation begins during predeployment and continues through the load out of vehicles and equipment. Ensuring the automated information technology (AIT) storage devices are accurate, properly attached, and readable facilitates in-transit visibility (ITV) throughout the transportation pipeline. AIT readers and interrogators report the movement to automated information systems, allowing deployment managers to track and control the flow of equipment.

3-10. Prior to departing their deployment stations, units must write radio frequency identification (RFID) devices and attach them to vehicles and equipment. Detailed guidance for writing and attaching RFID devices is outlined in appendix D.

CONVOY OPERATIONS

Figure 3-1. Military convoy

3-11. In some cases units convoy their vehicles and equipment to the POE. A convoy is a group of vehicles organized for the purpose of control and orderly movement under the control of a single commander. In the absence of policies to the contrary, convoys are considered six or more vehicles. Vehicles in a convoy are organized into groups to facilitate command, control, and security and normally move at the same rate.

3-12. To assist in the centralized convoy management, FORSCOM has implemented a Mobilization Movement Control Automation System (MOBCON) in each state. The unit will submit a convoy request (DD Form 1265, *Request for Convoy Clearance*) through the installation UMC. MOBCON uses the National Highway Network database to schedule and deconflict convoys within CONUS. The deconfliction process allows only one convoy to operate over a segment of highway at any given time. The program links the Defense Movement Centers and provides visibility of all convoys.

3-13. Units deploying from OCONUS locations must contact the supporting movement control team (MCT) for convoy march credits. The minimum number of vehicles in a convoy is dictated by theater policy, standardization agreement, or the host nation (HN), as are the procedures for processing convoy clearances.

3-14. Refer to FM 4-01.011 and FM 55-30 for specific guidance on planning and conducting convoy operations; and FORSCOM/ARNG Regulation 55-1 for specific information regarding MOBCON.

RAIL OPERATIONS

3-15. Rail is also used to ship vehicles and equipment from power projection and power support platforms. Responsibility for planning and executing rail movements is split between the deploying units and the ITO. The deploying unit determines its movement requirements and submits them to the ITO. The deploying unit is also responsible for preparing their equipment for rail loading. Units load railcars and chock, block and tie down equipment under the technical supervision of the ITO, who is responsible for approving all rail loads.

3-16. The ITO is responsible for obtaining rail cars based on deploying unit requirements; validating railcar requirements based on unit rail load plans; and maximizing the use of the available rail assets. In addition, the ITO is the official liaison with SDDC and the railway agent and inspects all railcars for serviceability before units begin loading.

Figure 3-2. Loaded rail cars

3-17. The MCT performs the ITO functions in OCONUS locations and obtains the rail cars, validates railcar requirements, serves as the liaison with the railway agent, and inspects the railcars before the units begin loading. Refer to FM 4-01.011 for specific guidance on planning and moving by rail.

ACTIVITIES AT THE PORT OF EMBARKATION

SEAPORT OF EMBARKATION

3-18. There are essential activities that occur at the SPOE during deployment operations as units prepare for shipment by strategic sealift. The tasks are performed by a number of DOD and Army units and ad hoc organizations. Figure 3-3 is a graphic representation of a SPOE outlining the areas discussed in the following paragraphs.

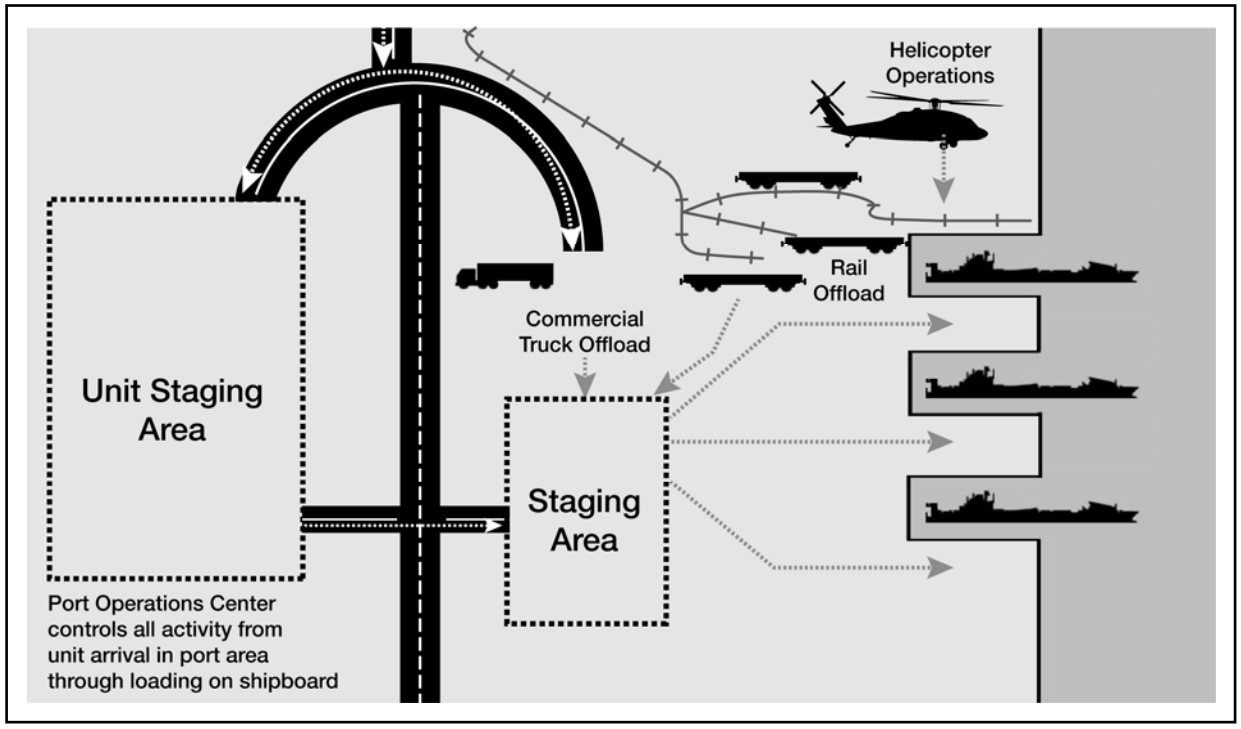

Figure 3-3, Notional Seaport of Embarkation

Unit Staging Area

3-19. For movement to SPOEs, deploying units and equipment may use an enroute unit staging area, established and operated by the supporting installation. These areas are ideally located near the port staging area and in the immediate vicinity of rail and truck discharge sites. The SPOE marshaling area is the final enroute location for preparation of unit equipment for overseas movement prior to the equipment entering the port staging area. Establishment of a marshaling area reduces congestion within the terminal area and provides space for sorting vehicles for vessel loading. The layout of a marshaling yard is not fixed but is contingent on available space and needs of the unit. Equipment arriving in the marshaling area is normally segregated in accordance with the vessel stow plan.

Staging Area

3-20. The equipment is moved from the marshaling area or installation to the staging area based on the call forward plan and as directed by the port commander. The SDDC port commander assumes custody of the cargo at this point. Activities within the area include inspecting equipment for serviceability, packing lists/load card, determining the accuracy of dimensions and weights, inspecting properly secured secondary loads, and documenting any cargo requiring special handling. Military shipment labels affixed to equipment will be scanned using bar code readers. The data will then be loaded into the Worldwide Port System (WPS) to produce the ship manifests and serve as the basis for status reports.

Figure 3-4. Equipment staged for loading

3-21. In CONUS, a supporting installation is assigned responsibility for the logistical support of deploying units that transit the marshaling area. The installation element providing this support is not part of the port support activity (PSA). The PSA operates in the SPOE staging area. If marshaling areas are not used, units move directly to the port staging area.

3-22. In a mature OCONUS theater, an organization will be designated to provide PSA and associated logistic support for deploying units. Otherwise, the support group provides logistic support for deploying units, and the deploying force provides PSA support to augment the port commander's terminal operations force.

3-23. When processed, equipment may be segregated into different lots within the staging area by type, size, and any other special considerations such as hazardous materials, sensitive and classified items, and containerized equipment. From the staging area, vehicles are called forward to load the ship based on the stow plan and call forward schedules.

Supercargo

3-24. Supercargoes are unit personnel designated on orders to accompany, secure, and maintain unit cargo onboard ships. They perform liaison during cargo reception at the SPOE, vessel loading and discharge operations, and SPOD port clearance operations. The supercargoes are attached to the port operator and remain with the port operator at the SPOD until the offload is complete and they are released back to their units. Unit commanders recommend the composition of supercargoes based on several factors, including the amount and types of equipment loaded aboard the ship and the number of units with equipment on the ship; however, MSC determines the actual number of supercargo personnel permitted onboard, based on the berthing capacity on the ship.

AERIAL PORT OF EMBARKATION

3-25. The APOE is the transition point for Army units deploying by air (figure 3-5). The tasks that take place in each of the four areas are outlined in the following paragraphs. Normally, there will be Air Force and Army personnel working together to process, inspect, document, and load the personnel and equipment. At some locations, the Army performs all of the APOE functions, and in those cases, the Army personnel are trained and certified to fulfill the Air Force roles.

Figure 3-5. Troops boarding C-17

3-26. There are four distinct areas associated with an APOE as shown in figure 3-6 and discussed in the following paragraphs:

- Marshaling area
- Alert holding area
- Call forward area
- Loading ramp area

Marshaling Area

3-27. The primary purpose of the marshaling area is to provide a location near the APOE to assemble personnel, supplies, and equipment and make final preparations for air shipment. Unit marshaling areas are used to receiving convoys and processing vehicles before they are staged for loading. Marshaling areas are the responsibility of the deploying commander who is normally assisted by the ITO, supporting units, or other designated organizations, based on local policy.

3-28. The deploying unit—

- Establishes liaison with the DACG.
- Coordinates a joint planning conference with the DACG and CRG to discuss aircraft allowable cabin load, pallet restrictions, aircraft configuration, equipment preparation requirements, airflow schedule, and any other issues impacting deploying unit preparation and processing.
- Prepares vehicles and equipment.
- Ensures adequate shoring material is available.
- Prepares personnel and cargo manifests.
- Assembles personnel, supplies, and equipment into aircraft loads.
- Ensures planeload commanders are appointed and briefed.
- Provides escorts for sensitive items.

3-29. The DACG—

- Maintains liaison with the deploying unit and the CRG.
- Coordinates with the CRG for technical assistance.
- Calls aircraft loads forward from the marshaling area and assumes control in the alert holding area.

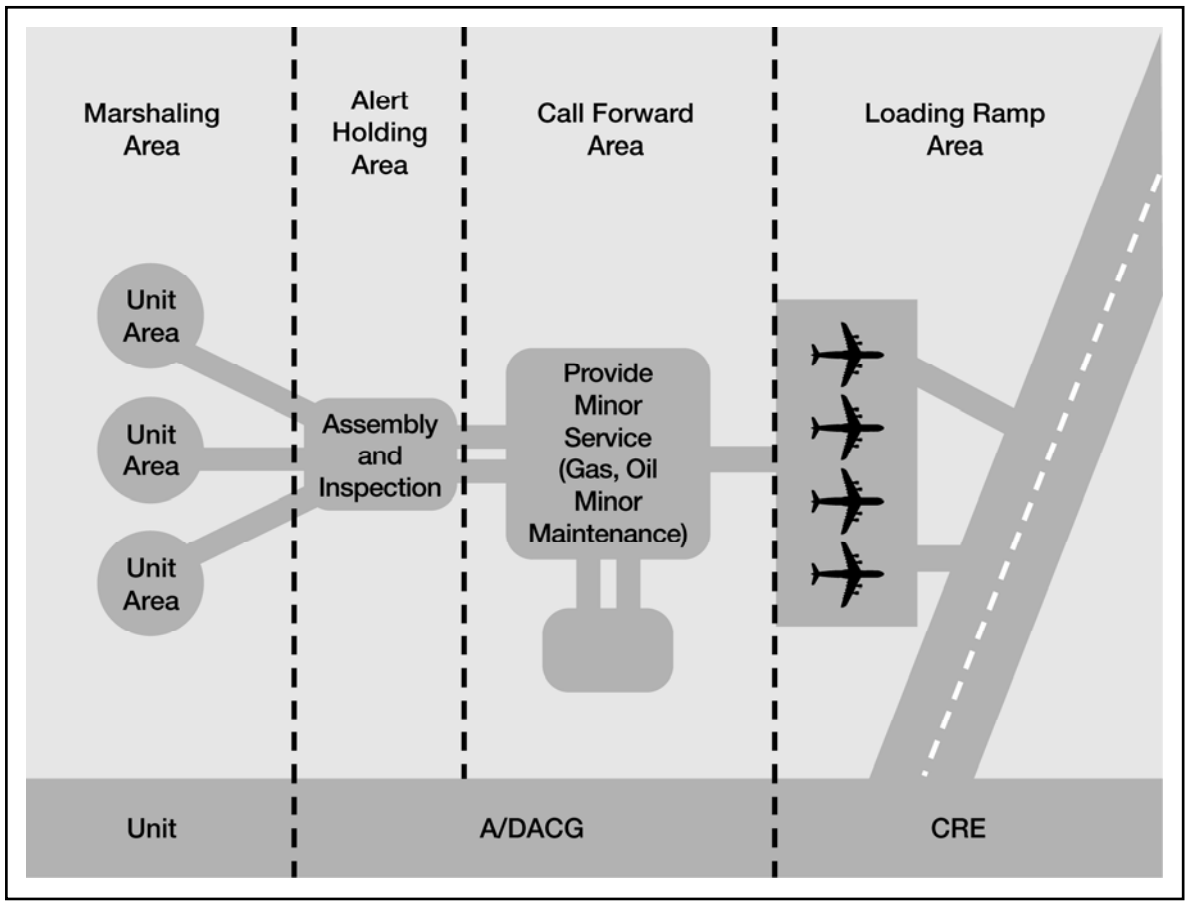

Figure 3-6. Notional aerial port of embarkation

3-30. The alert holding area is the equipment, vehicle, and passenger control area. It is normally located in the vicinity of the departure airfield and is used to assemble, inspect, hold, and service aircraft loads. Control of loads is transferred from the individual unit to the DACG at this point.

3-31. The deploying unit—

- Ensures the aircraft loads arrive at the scheduled times.
- Provides manifests to the DACG.
- Corrects load discrepancies identified during pre-inspection.
- Ensures vehicle drivers remain with the vehicles until released.
- Passes control of unit aircraft loads to the DACG.

3-32. The DACG—

- Ensures loads arrive at the alert holding area at scheduled times.
- Receives, inventories, and controls aircraft loads as they arrive.
- Inspects aircraft loads to ensure that they are complete and correctly prepared.
- Ensures required shoring, floor protection materials, 463L pallets, and dunnage are available (identified in the BBPCT requirements).
- Verifies weight and balance markings.
- Establishes a discrepancy correction area.
- Inspects documentation for accuracy and completeness.
- Inspects HAZMAT for proper documentation.
- Provides emergency maintenance, defueling, and related services.
- Coordinates MHE support.
- Directs aircraft loads to the call forward area.

Call Forward Area

3-33. The call forward area is the joint responsibility of the CRG and the DACG and is the location for the joint inspection of deploying unit equipment and cargo. The DACG, the deploying unit, and the CRG conduct the inspection. They complete a DD Form 2133 (*Joint Airlift Inspection Record*) to indicate to the loadmaster that the required inspection is complete. Deficiencies are corrected by the unit and rechecked by the inspection team. Once the inspection sequence is complete, the deploying unit arranges its vehicles, pallets, and equipment into the call forward load or chalk sequence. A final briefing is provided to deploying troops and the CRG reviews all manifests for accuracy.

3-34. The DACG—

- Establishes communications with the CRG and deploying units.
- Reviews HAZMAT documentation and load plans.
- Ensures manifests are correct.
- Ensures the deploying unit adheres to the established movement schedule.
- Changes aircraft loads and manifests when required.
- Ensures that discrepancies found during the JI are corrected.
- Provides loading team personnel and support as required.
- Escorts chalks to the ready line and briefs personnel on flight safety.
- Retains copies of manifests and inspection records.

3-35. The CRG—

- Coordinates with the DACG on all changes required by aircraft configuration.
- Conducts the JI together with the DACG and unit representatives.
- Provides guidance to DACG and deploying Soldiers concerning flight line procedures.
- Provides a team chief for each loading team.
- Notifies the DACG to dispatch chalks to the loading ramp/ready line.
- Provides airflow status to the DACG.

Loading Ramp Area

3-36. The loading ramp area, including ready line area, is controlled by the CRG. At this point, control of units for movement purposes passes to AMC.

3-37. The chalk commander—

- Follows directions of load team chief.
- Monitors and controls aircraft passengers.
- Retains one copy of the final passenger/cargo manifest.
- Provides assistance in loading and securing the load as required.
- Ensures vehicle/equipment operators follow instructions of load team chief or loadmaster in loading equipment on the aircraft.

3-38. The DACG—

- Transfers control of the loads to the CRG.
- Maintains coordination with the deploying unit and CRG.
- Obtains chalk completion times from the CRG.

3-39. The CRG—

- Accepts chalks from the DACG at the ready line and loads them aboard aircraft.
- Ensures each aircraft load is positioned at the proper aircraft at the scheduled time.
- Escorts passengers to the aircraft.
- Briefs all personnel on flight line procedures.
- Ensures each chalk is positioned at the proper aircraft at the scheduled time.

- Maintains liaison with the aircraft crew and the DACG.
- Coordinates with the loadmaster to ensure the aircraft is loaded in time to meet the scheduled departure time.
- Provides MHE and special loading equipment, as required.
- Provides loadmaster with manifests and retains copies for file.

3-40. The load team—

- Receives loads at the ready line.
- Loads and secures vehicles and equipment in the aircraft under the supervision of the loadmaster.
- Provides the loadmaster with manifests.
- Informs CRG of load completion time.

MOVEMENT TO THE PORT OF DEBARKATION

3-41. The combination of strategic airlift and sealift (figure 3-8) provides the capability to respond to contingencies. Each element of strategic lift has its own unique advantages and disadvantages. In general, airlift transports light, high priority forces required to rapidly form units with pre-positioned equipment and supplies. Strategic airlift support is the critical deployment enabler during the early stages of deployment and remains so until the sea line of communications is attained. In most cases, sealift accounts for the majority of the total cargo delivered to a theater of operations. As the principal means for delivering equipment and logistic support, sealift impacts the ability to conduct sustained operations and influence the outcome of the operation being conducted. Refer to JP 3-17 and JP 4-01.2 for additional information regarding strategic lift.

Figure 3-7. Strategic Mobility Triad

Chapter 4

Reception, Staging, Onward Movement, and Integration

During force projection operations the process used to generate combat power is known as reception, staging, onward movement, and integration. It is the means by which commanders shape and expedite force closure in the theater of operations. While logistics is critical to the mission, the steps a unit must accomplish to complete the process should be discussed in the deploying unit's operations order and treated as an operational requirement. It should not be relegated to the administrative and logistics or service support annexes. RSOI is necessary to return units to combat-ready status in a controlled, orderly, and systematic process after being split to facilitate movement. Given proper operational priority, units will experience a much more successful execution. Effective, well conceived RSOI operations speed force closure; conversely, ineffective RSOI delays force closure and compromises the combatant commander's ability to implement a concept of operations. In a force projection environment, the ability to execute a mission quickly depends on the speed with which combat power can be assembled at required locations. This involves much more than merely bringing Soldiers and equipment into the theater. Rather, these segments must be planned in detail to allow efficient reception, rapid staging, and expeditious movement to tactical assembly areas (TAA). Effective stages lead to seamless integration into mission operations. Most theater entry inefficiencies result from inadequately integrating RSOI into operational plans, or from commanders changing deployment schedules without considering the impact on either time-sequenced units or the throughput of the theater.

OVERVIEW

4-1. The four segments of RSOI are—

- **Reception** is the unloading of personnel and equipment from strategic transport, marshaling them, transporting them to staging areas, and if required, providing life support services.
- **Staging** is the assembling, holding, and organizing arriving of personnel, equipment, and basic loads into units; preparing the units for onward movement; and providing life support until the unit becomes self-sustaining.
- **Onward movement** is moving units from reception facilities and staging areas to TAAs or other theater destinations; placing arriving nonunit personnel to gaining commands; and providing sustainment to distribution sites.
- **Integration** is the synchronized transfer of authority of units to a designated component or functional commander for employment in the theater of operations.

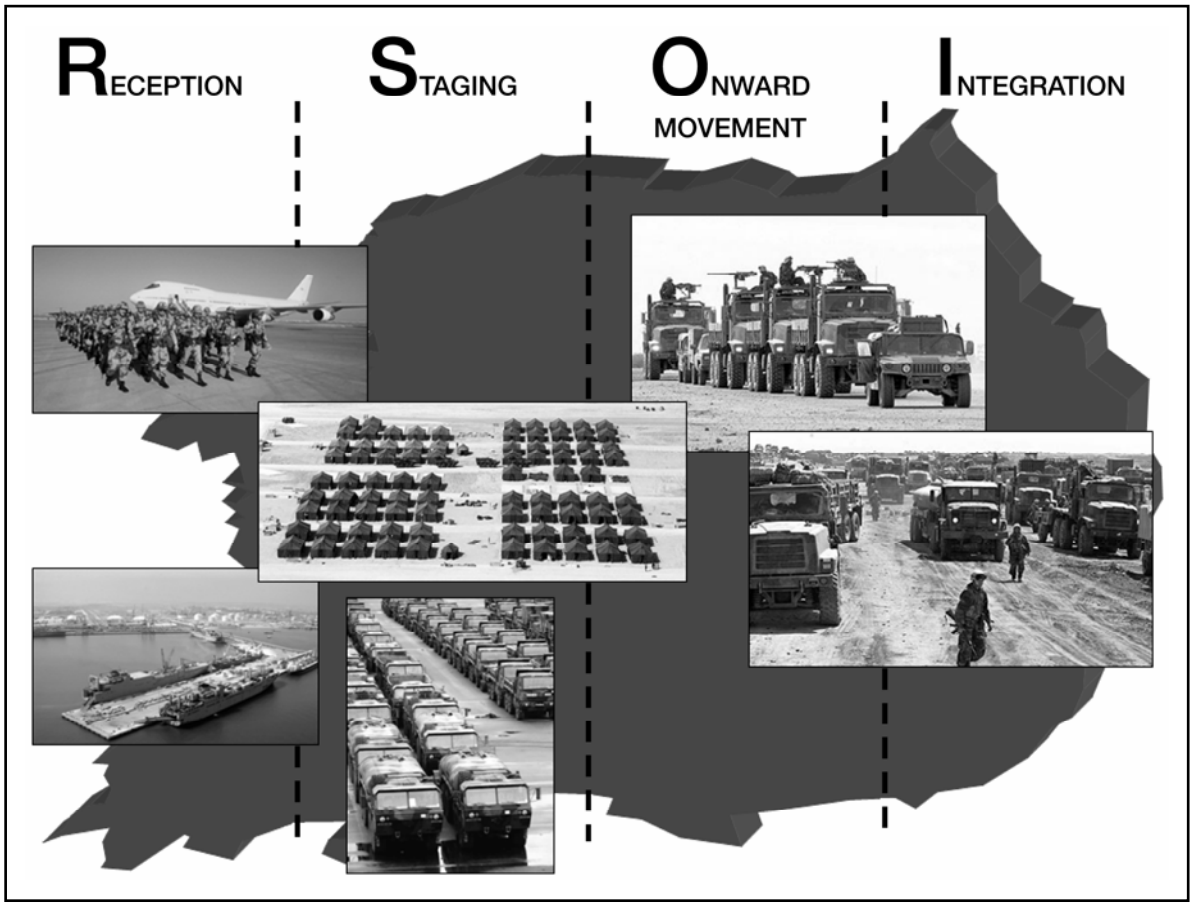

Figure 4-1. Segments of RSOI

PRINCIPLES OF RSOI

4-2. The following principles guide the planning and execution of RSOI operations:

- **Unity of command**. One commander should control and operate the RSOI process—adjusting resources based upon deployment flows, controlling movements in the area of operations, and providing life support to arriving personnel.
- **Synchronization**. Synchronization is managing the flow to ensure the arrival of personnel and their equipment coincide. This enhances command and control and helps maintain unit integrity. Force planners and transportation agencies must ensure that unit integrity is a fundamental consideration when planning unit deployments.
- **Unit integrity**. Moving personnel and their equipment on the same strategic transportation asset from origin to destination simplifies force tracking and reduces RSOI requirements. An objective of Army movement planning is to maintain the maximum unit integrity possible within the DTS framework.

- **Balance**. Proper sizing of the logistic structure required to support the deploying force is essential to balance. The goal is to deploy minimum assets necessary to optimize throughput of units and materiel. The balance is achieved by managing the TPFDD, specifically including theater opening resources together with the combat forces and incorporating sustainment in the flow with unit supplies and equipment.

BUILDING COMBAT POWER

4-3. The purpose of RSOI is to build the combat power necessary to support the COCOM's concept of operation. Force closure is that point which the combatant commander determines that an adequate combat-ready force is available. Force closure requires well-defined criteria by which unit commanders can measure their readiness.

4-4. Reporting the build of combat power begins with established standards for readiness. Assessments of combat power are based on unit capability, rather than simple tallies of numbers of vehicles and weapon systems on hand. Readiness and reporting are inherently operational matters, normally handled through operations channels.

4-5. Thus, RSOI operations must also be particularly flexible regarding force closure. Commanders may accelerate rates of force integration or change the sequence of unit integration at the risk of disrupting the flow. Nonetheless, due to both limitations of strategic lift and time delays inherent in intercontinental deployments, many decisions made at the beginning of the deployment process are practically irrevocable.

RSOI PLANNING

4-6. Planners must consider the impact of the threats and operational environment on the conduct of RSOI operations. The assessment must address whether and to what degree a potential threat can disrupt or block operations as well as determine what infrastructure and support assets are available.

4-7. The threat assessment is an important element in understanding and weighing the risks to mitigate the threat. It outlines the enemy capabilities and likely enemy courses of action associated with different options available to the combatant commander. Based on the threat, the combatant commander must determine where and how much risk to accept in the RSOI process and the resulting force closure.

4-8. Military operations begin with an event that requires movement of forces somewhere in the world, either planned or no-notice. Analyzing the mission leads to the development of courses of action. For each COA, the staff identifies the estimated throughput, in terms of personnel and equipment. The throughput estimates provide a basis for developing the requirements necessary to support the flow.

4-9. Understanding capabilities of the theater infrastructure and the time when enabling assets become available are also essential elements to developing a successful RSOI operation. Theater RSOI infrastructure is divided into two categories: organizational and physical. The organizational infrastructure is normally composed of a mix of—

- Forward-deployed forces.
- Army pre-positioned stocks.
- Deploying RSOI units.
- Host nation/allied support.
- Contractor support.

4-10. The RSOI physical infrastructure consists of the theater's nodes and available modes of transportation. Nodes are a location in a mobility system where a movement requirement is originated, processed for onward movement, or terminated. During RSOI operations, nodes form wherever transportation modes are changed; for example, at airports, seaports, and at staging areas. The two modes of transportation are surface and air. Surface is further subdivided into sea, inland waterways, coastal waterways, highway, and rail.

4-11. Once the COA has been selected, the planners develop the plans identifying the location of the PODs, corresponding support requirements, resource allocations, lines of communication, and infrastructure to achieve the desired force closure.

TIME-PHASED FORCE AND DEPLOYMENT DATA

4-12. RSOI effectiveness is dependent upon proper TPFDD development. For example, the combatant commander places rapid port clearance capabilities early in the TPFDD and coordinates personnel and equipment flows on the TPFDD so they can be united without delay at ports or staging areas. Decisions on force mix and sequence are critical, because adjustments after deployments begin become difficult to implement. Moreover, changes cause ripple effects and may seriously disrupt the flow to the battlefield.

Communication

4-13. Seamless transfer from strategic lift to intra-theater onward movement depends on RSOI providers knowing what is coming and when. The communication system must link the combatant commander the supporting combatant commands, the deploying units, the RSOI providers, and the tactical commanders who will integrate the deploying force into their structures. The RSOI support structure must be responsive to the combatant commander and the combatant commander's priorities. Mission, enemy, terrain and weather, troops and support available, time available, civil considerations (METT-TC) influenced changes may cause certain units to be in high demand or to be necessary for immediate employment. RSOI providers must be able to locate these units and coordinate their onward movement. Critical resources like heavy equipment transporters, fuel support, or buses to move personnel may have to be diverted to rapidly move these units. Rapid response missions become the norm during deployments. Communication is the key to managing this type of complex, ever-changing support environment.

4-14. Communication is necessary at all levels, and across all modes and nodes. Many organizations within the theater will require data to plan and conduct their assigned part of the RSOI operation. Consequently, secure, assured, compatible, and reliable means of relaying that data are essential. Most importantly, the joint force commander (JFC) must be able to influence the outcome of the deployment. To do this, the JFC must know what force capabilities are available and what will be available in the near future.

Optimization

4-15. The commander's planning and operational dilemma is balancing the need for early deployment of combat forces against the requirement to deploy tailored logistical units that maximize throughput of sustainable combat forces. To resolve this dilemma, the commander must have the ability to see, understand, and balance the flow. The combatant commander defines force requirements in terms of size, location, and time, while the TPFDD defines the force flow needed to meet these requirements. Knowledge of the RSOI infrastructure present in the theater, coupled with assets arriving via the TPFDD, is critical to understanding the flow.

4-16. The relationship between throughput volume and RSOI infrastructure is important to commanders trying to optimize force closure capacity. Accelerating the arrival of combat forces in the TAA requires an increased deployment of RSOI forces. Deploying additional RSOI forces costs space on strategic lift and requires additional positions in the TPFDD. The combatant commander applies the necessary command and control to ensure unity of command, and establishes communications for a seamless flow of information to manage and influence the force buildup. Achieving the correct balance will maximize the ability to throughput forces and ultimately improve force closure times.

Coordination

4-17. The Army operates in diverse environments and conducts a variety of operations as part of joint, multinational, or interagency teams. This fact increases the difficulty of RSOI and reaffirms the need for established procedures, mutually understood relationships, and robust liaison. Army commanders need to understand how best to integrate their forces into the various organizations under which they will operate.

This understanding and appropriate planning can improve the immense RSOI difficulties inherent in joint and multinational operations, as well as allow the best use of the complementary features of each nation and Service to optimize RSOI.

Joint

4-18. Joint integration of planning and execution is key to successful RSOI. This, however, does not occur automatically; it requires trained staffs, pre-established procedures, and ongoing coordination. Even though logistics is a Service responsibility, the combatant commander may direct that a particular Service perform certain common-user logistics (CUL) functions, based on the dominant-user or most-capable-Service concept. For example, the Army may be designated the lead Service responsible to provide all common user logistic transportation and movement control for RSOI within the JOA. In this case, the Army Service Component Commander (ASCC) must be familiar with the total transportation and movement control requirements of the other Services to permit optimum resource allocation necessary to address their needs.

Multinational

4-19. As compared with joint operations, multinational RSOI presents a greater challenge. Major differences in logistics doctrine, mobility, resources, interoperability, and language all create problems in coordinating the use of highways, rail lines, seaports, and airfields, as well as providing support and services to RSOI operations. Considerable planning is required to optimize use of multinational land, naval and air forces, space management, ship berthing and unloading facilities, transportation, labor, and construction materials—all critical elements of RSOI.

4-20. While logistics is ordinarily a national responsibility, it frequently falls to the United States to provide strategic lift and logistics support. It is imperative to establish clear responsibilities and identify support roles early in the planning process. Whenever possible, multinational organizations should be formed to coordinate RSOI operations. This should allow coalition or alliance members to use common items (for example, petroleum, oil, and lubricants [POL], medical supplies, tools, and so forth), and to set up commonly understood control measures.

4-21. Plans and operations for multinational RSOI should be as simple as possible, using common terms, common procedures, and clear and concise language. Where appropriate and possible, coalition commanders may combine staffs of two or more nations to better coordinate complementary RSOI capabilities; facilitate exchange of vital information; and reduce friction, congestion, and duplication associated with multiple-use of limited assets and capacities.

Host Nation Support

4-22. Host nation support is civil and military assistance rendered by a nation to foreign forces within its territory during peacetime, crises or emergencies, or war based on agreements mutually concluded between nations. In many cases, U.S. Forces must rely on host nation support to supplement or provide services, supplies, and facilities. This is especially significant when the combatant commander tries to minimize the support forces and equipment early in the TPFDD.

4-23. It is beneficial to establish host nation agreements beforehand, when possible. Where no agreements are in place, the combatant commander's staff and RSOI manager should understand the RSOI capabilities or resources of prospective host nations and the contractual procedures necessary to obtain them. It is also important that the host nation understand overall U.S. requirements. Moreover, as early as possible, representatives, with interpreters, must be sent to negotiate the acquisition of host nation services.

4-24. Host nation support relieves U.S. Forces from the task of establishing and maintaining equivalent capabilities by providing a variety of services and facilities, thereby reducing the U.S. logistical footprint and RSOI "overhead." An additional lift becomes available for transport of combat forces, expediting force closure. Among specific services and facilities that can be partially delegated to host nation support are as follows:

- Life support.
- Medical facilities.

- Construction and engineering.
- Police and paramilitary organizations.
- Transportation assets and infrastructure.
- Labor force.
- Emergency services.
- Fuel and power facilities.
- Communications facilities.

Interagency

4-25. In the course of joint and multinational operations, the Army operates alongside U.S. and non-U.S. Government agencies, nongovernmental agencies, and private voluntary organizations. In most cases, these organizations and agencies will compete for space at ports, airfields, and facilities used for military operations. They will travel over the same lines of communication (LOC) and require a variety of support from the military. They may disrupt RSOI and siphon resources away from military.

4-26. To build unity of effort and consequently gauge impact of these agencies and organizations on the RSOI effort, the commander can establish a civil-military operations center. In addition, it may be necessary to develop formal agreements between the military and civilian organizations to improve coordination and effectiveness.

Liaison

4-27. Liaison with forces of each Service, nation, and the next higher headquarters is a prerequisite for smooth operation of RSOI. It is indispensable for understanding each participant's operating procedures and for timely transfer of critical information. Whenever possible, liaison personnel should be familiar with operational organizations, doctrine, and procedures of the force with which they will work. For multinational operations, they should either speak the language of the force they are with or use qualified interpreters.

4-28. RSOI liaison personnel need to be familiar with the overall RSOI plan. They must understand how their Service fits into the overall design and best supports the COCOM's plan for the build of combat power. It is helpful if the liaison members are experienced in joint/multinational operations.

Command and Control

4-29. There are obvious advantages of designating one organization as the RSOI command and control element. It avoids duplication of effort, waste of resources, and competition for critical facilities. It optimizes use of valuable strategic lift and allows integrated reporting of activities related to the buildup of combat forces. Although the specific responsible organization may change from one phase to another or between different contingencies, the principle of unity of command must be maintained. One organization needs to have the requisite authority (normally designated by the supported COCOM) and capabilities to control and operate the entire RSOI process to maximize the throughput of forces and materiel. The organization must be able to adjust resources based upon the deployment flows, control movements in the area of operations, and provide life support to personnel arriving in-theater.

4-30. The combatant commander may choose to designate the Army as the lead Service RSOI support. When this happens, the Army Service Component Command (ASCC) will normally designate the senior support commander, most often the Expeditionary Sustainment Command (ESC) commander or the Theater Sustainment Command (TSC) commander, to provide unity of command to execute all common user RSOI support functions. The combatant commander and/or ASCC commander may attach additional Service or Army units to the senior logistic command to assist in this challenging task.

RECEPTION

4-31. As the initial step in introducing combat power, reception can determine success or failure of the RSOI operation. Reception from strategic lift is implemented at or near designated air and seaports of debarkation, normally under control of the combatant commander. It must be thoroughly planned and carefully executed. While the reception plan for each theater may vary, reception capacity should at least equal planned strategic lift delivery capability.

4-32. The intelligence preparation of the battlefield (IPB) and analysis of theater reception capability provide an understanding of how competition for reception at airfields and seaports could affect the force flow. For example, in Desert Storm at the Port of Dammam, 33 total berths were available; yet, no more than 17 were used because the remaining berths were dedicated to domestic Saudi commerce. Units may compete for off-loading berths with other services or multinational forces that are part of the supported COCOM plan.

Figure 4-2. Unloading vehicles

4-33. For the initial period of deployment, the aerial port is the lifeline to the front-line. All that is not pre-positioned or available from the host nation comes through the aerial port. Then, the first surge sealift ships begin to arrive, dramatically increasing forces. Airlift remains a critical element regarding delivery of personnel, but most unit equipment to build the combat power arrives through seaports.

FUNCTIONS

4-34. Synchronizing transportation reception activities are critical to facilitating throughput at the ports of debarkation. They include command and control, movement control, and port operations.

Command and Control

4-35. The combatant commander typically assigns the senior Army logistics commander with the responsibility to support reception of forces, there are other service organizations that provide theater opening capabilities, depending on the time and size of the deployment. The joint task force—port opening is composed of AF contingency support personnel and Army movement control and cargo handling capabilities to establish a POD and clear the cargo from the port to a nearby distribution hub. In addition, joint task force—port opening will conduct assessments of the existing distribution network to determine

the resources required to support the continued flow of deploying foces and begin the distribution of sustainment. The Sustainment Brigade with the Transportation TO element are designed to provide the deploying force the capability to open multiple air and sea ports and establish RSOI capability in theater.

4-36. The arrival of strategic air and sealift will be controlled by the combatant commander through the USTRANSCOM element attached to the combatant commander's staff. The APOD and SPOD will normally be managed by AMC and SDDC respectively and operated by the designated logistics command under command and control of the lead service. It should be noted that reception activities continue after force closure is achieved to facilitate arrival and processing of sustainment and unit replacements.

Movement Control

4-37. Efficient movement control allows commanders to redirect forces and rapidly compensate for disruptions in the LOC. A movement control element must be positioned at each reception node and remain in constant communication with USTRANSCOM elements on-site and with other movement control elements in-theater. A well-disciplined and centralized system must be implemented to control movements along all LOCs. The movement control system is responsible for establishing protocols with host/allied nations concerning use of available transportation nodes and infrastructure.

4-38. Two factors determine reception throughput: reception capacity and clearance capability. All ports have finite processing and storage space. Unless personnel and equipment are cleared quickly, the port will become congested, cargo will be frustrated, and the infrastructure will be unable to receive forces at the required rate of delivery. Factors contributing to efficient port clearance are proper documentation, professional movement control expertise, adequate materiel/container handling equipment, and trained personnel. Port operators need timely and accurate documentation, including advance information on forces and equipment arriving in-theater. Efficient movement control assures best use of available infrastructure and proper metered flow of forces and equipment according to operational priorities.

Port Operations

4-39. Experience in contingency operations has shown the need to rapidly expand and improve port reception capability, regardless of the nature of ports being used. As the buildup of combat forces begins, capability for rapid expansion depends on well-synchronized arrival of personnel and equipment. The JFC must, therefore, control the deployment flow so that reception capabilities are not overwhelmed. APODs and SPODs should be considered integral parts of a single reception complex, unless the distance separating them precludes mutual support. Reception capacity depends on—

- Port and airfield infrastructure, condition, and characteristics.
- Availability of host nation labor and port services.
- Off-loading and holding space.
- Condition and capacity of exit routes.
- Efficiency of movement control systems.
- Holding and support facilities at reception nodes.
- Weather.
- Enemy situation.

Port Selection

4-40. Seaport and airfield throughput capacities significantly influence the speed, order, and, to a large extent, the types of units that can deploy through them. Consequently, before thought is given to actual deployment of forces, planners must evaluate available airfield and port facilities within the area of operations, as well as the transportation networks linking them with each other and to the interior. As was the case during Operation Desert Storm, it may be better to use a world class port hundreds of miles away from TAAs rather than conduct an in-stream discharge operation or use a smaller, degraded port facility with limited capacity and throughput. Diplomatic and military contacts should be made at the earliest possible opportunity with the host nations controlling key facilities and rights-of-way.

4-41. The combatant commander in conjunction with USTRANSCOM selects the PODs that will be used for deployment. METT-TC considerations and the theater transportation infrastructure will drive the sequence, type, size of forces, and materiel arriving at ports of debarkation. These decisions impact the speed of combat power buildup and continued development of the theater. For example, when opposed entry is likely, commanders may have to seize and secure airfields and seaports to permit insertion of follow-on forces. Afterwards, it may be necessary to repair damaged facilities in order to process arriving units at the required rate. Even in the event of unopposed entry, ports of debarkation will still require improvement and repair to accommodate high throughput rates required for rapid force closure. Thus, the early entry of units such as transportation battalions, cargo transfer companies, Army watercraft, causeway detachments, and engineer assets can be critical to off-loading materiel, clearing ports and consequently speeding deployment.

Aerial Port of Debarkation

4-42. The airlift challenge is often due to a lack of airports and associated capacity and not always the lack of aircraft. Consequently, maximum throughput at limited airports is paramount. The APOD is by its very nature a joint facility and will likely be a multinational facility. It is a POD for deploying forces, and a port of embarkation for forces moving to other theaters and noncombatant evacuation. The host nation may limit the APOD to coalition military use, or the military may be sharing the facility with commercial activities. Governmental, nongovernmental, and private organizations will likely be competing for use of the APOD along with military forces.

4-43. The APOD serves as the primary port of entry for all deploying personnel and for early entry forces normally airlifted into theater together with their equipment. Responsibility for APOD operations is divided between the Air Force and the Army, with the Air Force responsible for airfield operations, including air terminal control, loading, unloading, and servicing of aircraft. The Army is responsible for clearing personnel and cargo off the tarmac and for required life support. Air Force/Army interface occurs between the Air Force CRG and the Army A/DACG and movement control teams.

4-44. Necessary communication, personnel, and cargo handling equipment must be in place to facilitate rapid movement out of the airport. The CRG and the A/DACG must be included in the lead elements of the deploying force. The CRG controls all activities at the off-load ramp area and supervises aircraft off-loading. The A/DACG escorts loads and personnel to holding areas, thus clearing the airfield and ensures airfield operations and strategic airflow are not obstructed and limited due to the accumulation of cargo.

4-45. With responsibility divided between the Air Force, the Army, and sometimes multinational forces, multiple chains of command exist within the aerial port, which may result in a variety of unforeseen challenges. Given this potential command relationship, potential for conflicting priorities necessitates careful planning and coordination during the reception process. For example, something straightforward as security responsibilities becomes complicated when there are two chains of commands at the same site. Special attention must be paid to ensure that airfield security (the Air Force responsibility) and area security (an Army responsibility) are well coordinated among themselves as well as with multinational forces and the host nation.

4-46. Two primary physical constraints for airfields are parking MOG and working MOG. Parking MOG is the number of aircraft that can actually fit on the ground without impeding other activities. Working MOG is the number of aircraft that can be worked simultaneously based on the available material handling equipment and maintenance and fueling capabilities. Optimally, working MOG should equal parking MOG.

Seaport of Debarkation

4-47. Activities at seaports are normally joint, multinational, and intermixed with commercial operations. Seaports can serve as ports of debarkation for arriving forces and simultaneously as ports of embarkation for forces deploying to other theaters of operations. The COCOM has several options for management of seaport operations in theater. These options include the use of deployable Active Army and U.S. Army Reserves transportation terminal units or SDDC to operate some or all of the theater water terminals. USTRANSCOM through SDDC is the DOD-designated single port manager (SPM) for all common user

ports worldwide. The SPM performs those functions necessary to support the strategic flow of the deploying forces' equipment and sustainment supply in the SPOE and hand-off to the theater COCOM in the SPOD. The SPM is responsible for providing strategic deployment status information to the COCOM and to workload the SPOD port operator based on the COCOM's priorities and guidance. The SPM is responsible through all phases of theater port operational continuum from a logistics over-the-shore operation to a totally commercial contract-supported deployment.

4-48. The PSA is an important aspect of port operations and the TSC planners coordinate the requirements with SDDC. The PSA is an ad hoc organization comprised of personnel with the skills necessary to receive, process, and clear cargo from the SPOE or SPOD. The composition of the PSA varies with the mission to be supported and can be military, civilian, or host nation support or a combination of these. The PSA works directly for the port operator who reports to the port manager.

Figure 4-3. Equipment staged for loading

4-49. The volume of cargo arriving in the theater in a small window of time can drive the need for multiple seaports to meet deployment timelines. The physical size of the large medium-speed roll-on/roll-off (LMSR) ship and the draft requirement to bring vessels of this class pier side may also present a challenge. If world-class port facilities are available, off-loading can be rapidly accomplished. If facilities are less than world class or austere, then multiple ports and slower in-stream operations may be required.

4-50. The ability to project forces into an operational area, despite ports rendered unusable or inaccessible to deep draft vessels, is essential to the Army's force projection strategy. Army watercraft provides this capability through in-stream discharge. They allow the ship awaiting berthing space because of congestion or port denial to be off-loaded in-stream. In situations where world class ports are not available, Army watercraft can discharge the LMSRs in-stream and transship the cargo on smaller Army lighterage establishing an intra-theater sea line of communication to smaller coastal ports or directly over the shore.

4-51. The throughput capacity of a port (the ability to receive, process, and clear personnel and equipment) is a critical planning factor. The planner must check that the port is capable of receiving the planned strategic flow, considering not only the port's capability, state of repair, and congestion, but also its throughput capability. The ability to conduct in-stream (or offshore) discharge operations can expand a port's reception capability. A smaller port lacking the capability to receive large vessels can receive cargo discharged in-stream to increase the overall theater throughput. However, ability to perform in-stream off-loading is largely contingent on availability of Army watercraft and other assets moving cargo from ship to shore. In-stream off-load operations are sensitive to weather and sea conditions, and generally require a protected anchorage.

4-52. Seaport operations are similar to airport operations: vessels are off-loaded, cargo moved to a holding area, and then the port is cleared. Unit cargo clearing the port moves to a theater staging base (TSB) or directly to the TAA. Movement out of the port is controlled by movement control elements and must be integrated into the theater movement plan. Port clearance operations can involve one or more of the following transportation modes: highway, rail, and coastal/inland waterways. Refer to FM 55-50 and FM 55-60 for information on the roles Army water transport and terminal operations units might play in supporting deployment operations.

Figure 4-4. Staging base

STAGING

4-53. Staging is that part of the RSOI operation that reunites unit personnel with their equipment and schedules unit movement to the TAA, secures or uploads unit basic loads, and provides life support to personnel. These activities occur at multiple sites in controlled areas called TSBs that are required because space limitations normally preclude reassembly of combat units at seaports of debarkation. In general, there will be at least one TSB for each SPOD/APOD pairing.

FORCE CLOSURE

4-54. In order to meet the force closure requirements, the time that units spend staging through the TSB must be minimized. Staging should not be a lengthy process, but inefficiencies can cause delays (for example, personnel arriving before their equipment, equipment arriving before its personnel, and gaps in matching troops with proper equipment). In fact, a battalion-sized unit should strive to spend no more than two days staging in the TSB.

4-55. TSBs should be located in areas convenient to both the SPOD and APOD, with good lines of communication back to ports of debarkation and forward to designated TAAs. In addition, the TSB should have sufficient space to accommodate the largest force scheduled to stage through it, together with facilities for vehicle marshaling, materiel handling, equipment maintenance and calibration, and possibly bore sighting and test firing of weapons. All of these are needed if the TSB is to fulfill its function of converting personnel and equipment into mission-ready combat units.

4-56. Other factors affecting selection of a TSB include geography and terrain (for example, water supply may be a factor in desert operations or land space in urban settings), and availability of organic and host nation assets. These factors, together with the size of the deploying force, may often necessitate multiple TSBs. The requirement for multiple staging bases is most evident in the urban sprawl of Europe and Korea, particularly around seaport facilities. In many cases, it is tremendously difficult to find even one square mile of open terrain much less the total space requirement for a TSB. Figure 4-5 is a schematic

representation of how a theater may look with multiple reception ports and TSBs. Under normal circumstances, troops deploy by air while equipment deploys by sea and/or rail. The speed differential between air and sea surface transportation is the fundamental cause of complexity and potential difficulties in the staging process. Troops and equipment must be sequenced in the TPFDD so that both arrive (nearly) simultaneously, expeditiously unite, and ready themselves for onward movement. Troops arriving too early must be provided with meals and quarters while waiting for their equipment to arrive. The command responsible for RSOI would be expected to accommodate these needs. Moreover, the mass of immobile, unprotected troops presents an inviting and vulnerable target. On the other hand, if equipment arrives much earlier than the troops, ports of debarkation can become congested, and space management becomes critical.

4-57. Early deployment of essential theater opening support units at the expense of combat units pays dividends later by speeding the flow of the entire force, enhancing the COCOM's ability to build combat power and increase operational flexibility. Conversely, front loading the TPFDD with combat forces may jeopardize the COCOM's ability to build up forces as rapidly as required and thus reduce COCOM flexibility.

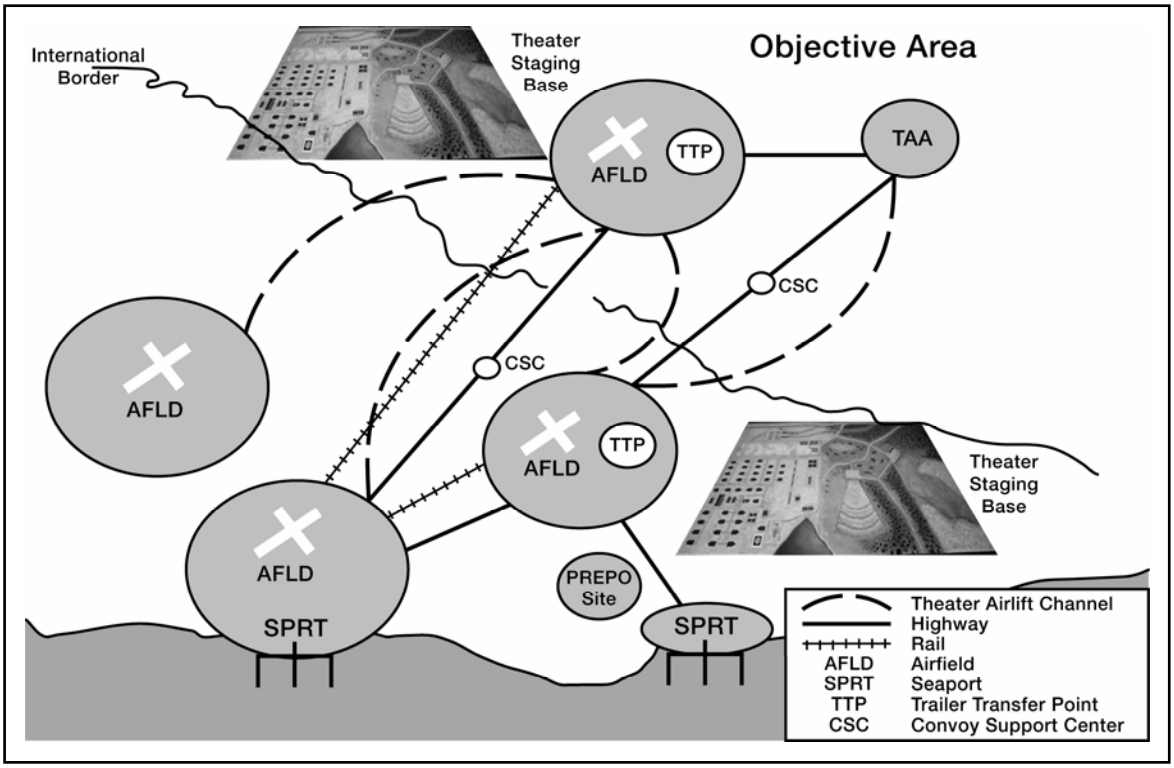

Figure 4-5. Notional theater laydown

THEATER STAGING BASE FUNCTIONS

Communications

4-58. Reliable, secure, and compatible communications are essential to operations in the theater staging base. The COCOM must know when forces are combat-capable and prepared for onward movement to give the COCOM the capability to control and employ these forces at the decisive point and time.

4-59. Force tracking provides situational awareness of combat-ready units within the operational area. While in transit, visibility begins at home station; the process of force tracking begins in the staging area, where equipment and personnel are reassembled into combat-ready units. Staging operations must have the

communications, data processing equipment, and personnel assets to provide and manage force tracking data. Efficient movement control can provide force tracking information, but it must be able to communicate directly with operational commanders.

4-60. ITV acts as a staging enabler by providing commanders with clear pictures of locations of units and materiel in RSOI and deployment. For the TSB commander, ITV provides an awareness of the scheduled arrival of personnel and equipment; so the resources required to support them and time required to assemble the unit in a mission-ready configuration are available.

4-61. At present, there are a number of joint systems in various stages of development that provide visibility of force deployment and sustainment. Unfortunately, present systems do not completely satisfy the requirements of force tracking and much of the process must be accomplished manually.

Life Support

4-62. Regardless of time actually spent in the TSB, troops staging through it will require support, including housing, sustenance, sanitation, and health care. RSOI planners must ensure that the force provider units are sequenced early in the TPFDD to be in place and functioning by the time the first units arrive. Even if this requires displacement of some combat capability, it pays dividends later in the form of higher throughput, faster buildup of combat power, and earlier force closure in the operation. The Army's Force Provider modules (each designed to provide base camp support to 550 people) and the Air Forces Prime Beef and Prime Rib programs are viable options for providing field services to transient and permanent parties.

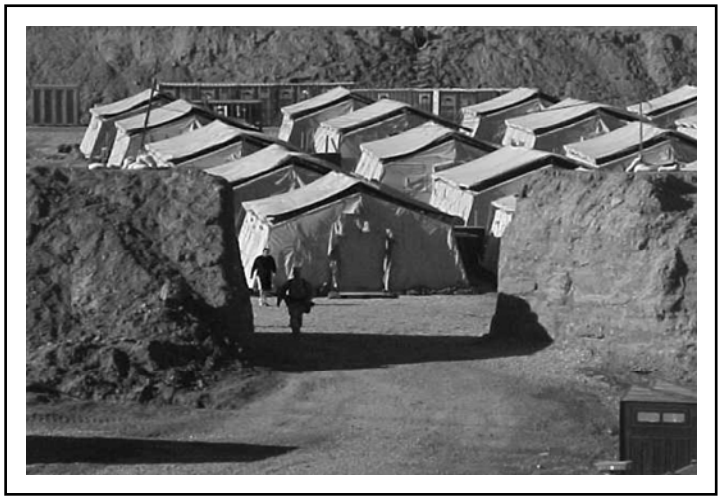

Figure 4-6. Base camp

Arming, Fueling, and Fixing

4-63. Equipment arriving at the TSB may require maintenance before it becomes combat ready. This includes calibration of equipment; bore sighting of weapons; replacement of parts damaged in transit; and painting, fueling, and loading. The TSB should provide adequate facilities to support these activities, including marshaling areas, maintenance shelters, fuel and ammunitions storage, a test- driving loop, and range areas. Figure 4-7 shows the layout of a notional TSB.

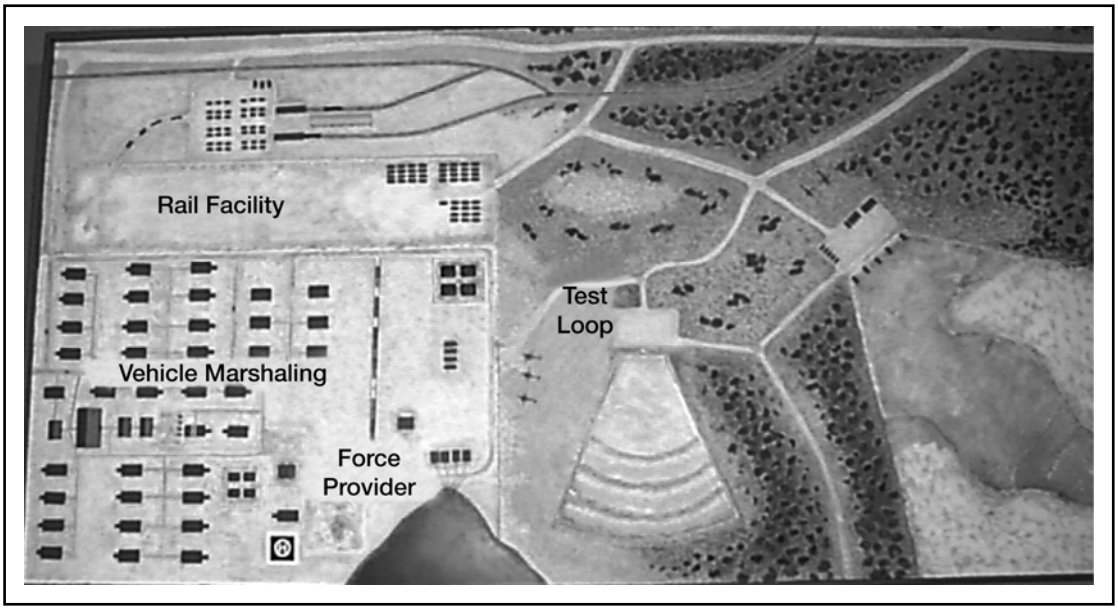

Figure 4-7. TSB Layout

Preparation of Units for Onward Movement

4-64. In addition to preparing equipment, units at the TSB undergo training and reorganization. Communications networks are established, and tracking systems allow senior commanders to monitor the buildup of combat power. Commanders must participate in planning the onward movement, including route planning, unit tracking, and movement control.

Security

4-65. Theater staging bases are high-value targets. Their destruction or damage results in serious delays in force closure and disruption of the COCOM's concept of operations. Units in the TSB are vulnerable to attack by enemy air, missile, and ground forces. Being immobile and only partially combat ready, they possess limited capability for self-defense. Moreover, with many troops and their equipment concentrated into a relatively compact area, there is great potential for massive casualties, which could result in serious strategic consequences.

ONWARD MOVEMENT

4-66. Personnel and equipment reassembled as combat-ready units must be moved to the TAA based on the COCOM's priorities. Onward movement is a joint/multinational effort using capabilities and organizational structures of other services, allies, host nation and other governmental entities. It is an iterative activity in which units advance from one line of communications (LOC) node to another. Onward movement occurs when units move from ports to theater staging bases or forward to the TAA. Three primary factors affecting onward movement are movement control, transportation infrastructure, and force protection.

MOVEMENT CONTROL

4-67. Movement control is the planning, routing, scheduling, and controlling forces and sustainment over lines of communication while maintaining in-transit visibility and force tracking. This is not a passive activity. Successful movement control requires continual analysis of requirements, capabilities, shortfalls, alternatives, and enhancements. Bottlenecks within the theater must be identified, and potential

interruptions to the flow minimized. One of the biggest challenges of movement control is rapidly adjusting to changes in the operational environment and the commander's priorities. The challenge of a theater movements program is to merge the COCOM's concept of operations and priorities in a movement plan and execute them. This challenge can be met by employing an adequate number of movement control resources, appropriately enabled by communications, to anticipate and improvise. Efficient movement control enables the commander to redirect forces and rapidly overcome disruptions in the LOC.

TRANSPORTATION INFRASTRUCTURE

4-68. The total transportation infrastructure-modes, routes, control factors, host nation support, and specialized handling requirements must be coordinated to maximize speed of movement. Army Forces, other Services, and allied forces will be competing for the same networks, and congestion will result if proper coordination is not accomplished. Capabilities of the transportation network must be balanced against movement requirements, so that modes and routes are neither saturated nor underused. Planners should anticipate simultaneous demands on limited infrastructure, difficulties with communications, and differences in transportation capabilities.

4-69. During onward movement, mode selection is an operational issue, as it determines whether the commander of the unit in transit maintains control or whether control is lost and further staging required. Ideally, rail and heavy equipment transporters should transport tracked vehicles, and wheeled vehicles should convoy. In-land and coastal waterways should be used when available as they afford militarily useful solutions.

4-70. Establishment of convoy support centers and trailer transfer points along main supply routes and other support centers at temporary airfields, rail sites and waterway drop off points, further aids onward movement. These allow units and line haul drivers to rest, eat, perform vehicle maintenance, and contact unit/movement control personnel to receive operational updates, to revise priorities, and when necessary, to execute diversions.

FORCE PROTECTION

4-71. The onward movement phase can provide the enemy with numerous opportunities to inflict serious losses and delay the build-up of combat power by exploiting vulnerability of units in transit. Force protection consists of those actions taken to prevent or mitigate hostile activities necessary to conserve the capability of the deploying force.

4-72. Adversaries seek to frustrate Army deployment operations by resorting to asymmetric means rather than challenge the Army in conventional combat. Insurgents may use improvised explosive devices, car bombs, and snipers to disrupt the flow of forces and sustainment moving over the lines of communication.

4-73. Enemy interdiction of onward movement presents special challenges that can be partially overcome by using alternative routing and mode substitution when feasible, but all units must be prepared to defend themselves. OIF convoys are organized and tightly controlled to afford a higher degree of security. Moreover, hardened gun trucks escort the convoys, and additional armed personnel ride in the vehicles to immediately engage insurgents as required.

INTEGRATION

4-74. During integration, combat-ready units are transferred to the operational commander and merged into the tactical plan. The transfer may require interaction and familiarization among units and that arriving units meet certain standards before being completely integrated into the combat plan. Consequently, requirements for integration planning and coordination must occur early in the force projection process and modified according to METT-TC until force closure is achieved. Integration is complete when the COCOM establishes positive command and control over the arriving unit, usually in the TAA, and the unit is capable of performing its assigned mission.

4-75. Unit operational and mission-readiness are prerequisites before integration can occur. The unit must be able to move, fight, and communicate at acceptable levels of capability. Internal command and control

must be re-established, and the unit must meet the readiness standard established by the tactical commander. The unit must be totally absorbed into the joint force and be able to communicate and receive command and control from its higher headquarters.

4-76. The time required for integration may vary, depending upon the size of the total force, contingency conditions, and amount of predeployment and ongoing planning and coordination. As the Forces are introduced into the theater, their movement will be in competition with resources required to support and sustain the existing and growing number of Forces deployed into the theater. Rapid integration, however, is critical to the success of combat operations, and adequate planning and coordination can reduce integration time.

4-77. The ability to accurately predict when integration will occur is critical to the commander's ability to conduct operations and maintain momentum. In order to accomplish this, the COCOM and component staffs must be able to build a TPFDD that meets the commander's intent. The COCOM can communicate intent through well-planned required delivery dates. Transportation feasibility will be conducted throughout the military decision making process as a means of checking acceptability and suitability of the courses of action. Once deployment begins, the COCOM monitors the TPFDD execution and any changes made must be analyzed for their impact on integration of mission essential capabilities. If changes are made, the TPFDD is revalidated by the COCOM to adjust for these changes.

4-78. Predeployment planning establishes force structure for the contingency and identifies units that must integrate. Once identified, units establish predeployment liaison and plan for theater integration. Coordination measures, ITV, and force tracking are used to predict the start of force integration and the time required for its completion. Criteria for unit mission readiness are an essential element of integration and must be included in the integration plan. Integration requirements are best defined using end-state analyses based on the COCOM's force requirements. The analysis identifies milestones for deploying units.

4-79. Plans must be open and flexible enough to adapt to reality on the ground. Technical problems, natural conditions, land space constraints, and enemy action all conspire to alter the commander's initial plan. The concept of operations should be broad enough to accommodate changes in strategic, operational, and tactical situations as they occur.

4-80. Deployment operations are time sensitive; compressed planning timelines and furious activity are the norm. Commanders need timely, accurate information to execute or modify initial plans in response to rapidly changing operational and tactical conditions. Confusion inherent to deployment often results in conflicting guidance, frequent planning changes, and inefficient task execution—all of which delay the build-up of combat power and the force closure.

4-81. Control measures, such as liaison officers or movement control teams can reduce confusion between integrating units, RSOI forces, and receiving headquarters. These measures act as guardians of the commander's intent and focus effort on force integration. These measures should be established immediately as part of the planning process and be maintained throughout the RSOI process.

4-82. The success of RSOI depends on—

- Responsive leadership
- Effective combat-power tracking system
- Reliable communications
- Force protection
- Transportation support
- Host-nation resources
- Soldier support service

Chapter 5

Redeployment

Redeployment is the return of forces to home station or demobilization station. Previously redeployment was almost an afterthought but with the introduction of ARFORGEN it has taken on a new significance. Reuniting unit personnel and their equipment at their home station triggers the start of the lifecycle management process (reset/train, ready, and available). The importance of this event is obvious now that required delivery dates are set for equipment returning from theater.

REDEPLOYMENT PROCESS

5-1. Commanders plan for redeployment within the context of the overall situation in the theater. The four phases of redeployment are redeployment preparation activities, movement to and activities at POE, movement to POD, and movement to home or demobilization station.

REDEPLOYMENT PREPARATION ACTIVITIES

5-2. Following completion of military operations, redeploying Forces move to designated assembly areas. Redeployment operations at the assembly areas are under the control and supervision of the TSC commander and include actions necessary to prepare the unit for movement. The COCOM issues a redeployment operations order releasing units from their missions and authorizing movement. Redeployment planning by the ASCC/Army Forces (ARFOR) normally precedes the actual issuance of an order and tentatively outlines information about the support network, follow-on operations, security requirements, and movement limitations imposed by infrastructure and resources. Redeployment operations must be conducted at a pace that does not disrupt the ability of the COCOM to execute continuing missions.

5-3. The redeployment plan conveys the commander's intent and includes responsibilities, priorities, and guidance for movement of forces, individuals, and materiel. Issues that must be addressed in the plan are—

- ARFORGEN
- Scheduling of redeployment activities.
- Transfer of equipment (stay behind equipment or equipment designated for depot rebuild).
- Basic load turn-in.
- Army pre-positioned stocks (APS) procedures.
- Security of the force.
- Availability of theater transportation assets.
- Availability of strategic lift.

5-4. Redeployment priorities are outlined in the OPLAN by the supported combatant commander. The UMO should adjust the equipment quantities in the OEL to reflect the gains and losses that have occurred while in theater. The changes are normally attributed to combat losses, maintenance, or supply. Subordinate organizations and component commands must verify unit movement data to the supported combatant commander. USTRANSCOM develops the redeployment strategic movement schedule after receiving the validated requirements from the supported combatant commander.

5-5. A movement order may be issued sequentially for each movement or may be contained in one movement order designating the timing and means of transport to the POE. The theater movement control

element issues movement tables that give detailed movement instructions to redeploying units. The TSC usually manages the redeployment support that can be performed by a subordinate organization.

5-6. The unit begins the redeployment process by identifying requirements and determining current unit status. Other actions include—

- Submitting personnel and pay actions.
- Conducting medical screening.
- Performing equipment checks and services.
- Conducting equipment inventory.
- Refining the UDL.

MOVEMENT TO AND ACTIVITIES AT THE POE

5-7. Redeployment planning results in a network of transit areas designed to efficiently move forces from their area of operations to their final destinations. Use of these areas may vary with the situation.

Figure 5-1. Redeployment wash rack

Assembly Area

5-8. Units move to an assembly area to prepare for redeployment after being relieved from their operational mission. The assembly area should be away from the immediate employment area. Movement to and within the area is under control of the Distribution Management Center (DMC). Units in the assembly area inventory, inspect, and process equipment for turn-in or transfer; load containers; prepare documentation; conduct U.S. Customs inspections; finalize unit movement data; and plan for movement to a POE. Units update UDLs and generate documentation and MSLs using TC-AIMS II. Equipment moving from the assembly area to the POE must have MSLs applied prior to loading. Documentation includes hazardous shipping declarations, labels, placards, secondary cargo load plans/cards, packing lists, and MSLs.

5-9. Units wash major end items to satisfy Department of Agriculture standards. Customs and agricultural inspection standards are based on the destination and types of equipment being redeployed. Units should make plans to perform the activities necessary to meet these standards. The time required to wash vehicles can be considerable and likely will be the overriding factor in redeployment scheduling. For example, a high mobility multi-purpose wheeled vehicle can take approximately 12 hours to wash to meet the agricultural standards, and larger equipment can take a day or more to wash. Considerations in computing the estimated time to wash unit equipment should include the equipment density, estimated time for each piece of equipment, the number of wash points, and the staffing at each location. Once the equipment is cleared by customs inspectors, it will be held in a secure sterile area until it is moved to the POE.

Activities at the SPOE

5-10. Units normally move to the SPOE staging area from assembly areas. Some SPOEs may not have total use of the port area. Port managers and operators must closely coordinate their activities with host nation authorities as well as joint and multinational elements. Joint-use facilities and limited real estate availability may require port authorities and redeploying forces to modify processes to accommodate port capabilities.

5-11. SDDC as the single port manager directs water terminal operations to include supervising contracts, cargo documentation, security operations, and the overall flow of information. SDDC is responsible for providing strategic redeployment information to the COCOM and to workload the port operator based on the COCOM's priorities and intent. Activities associated with moving Army units through SPOEs are outlined in chapter 3.

Activities at the APOE

5-12. The agencies and processes involved in moving Army units through an APOE during a deployment are similar to those at an APOE during redeployment. Customs and agricultural inspections are the principal difference, and the inspection standards are based on the country the unit is departing from, the unit's destination, and the type of equipment.

CUSTOMS PROCEDURES

All DOD-sponsored cargo is inspected at the overseas point of origin by military customs inspectors. Military equipment is inspected at the time it is placed in boxes, crates, containers, sea vans, or similar receptacles for movement and secured until departure from the overseas area. Vehicles and similar items to be shipped are inspected and secured immediately prior to loading on the departing aircraft or vessel. The packing list and TCMD for each container replace the DD Form 1253 *Military Customs Inspection (Label)* and DD Form 1253-1 *Military Customs Inspection (Tag)*.

Inspectors normally check a minimum of 10 percent of all baggage 24 hours before the departure time. Once inspected, baggage is stored in a sterile area until transported and loaded at the APOE. Approximately 4-6 hours prior to the scheduled departure, Soldiers process through customs with their carry-on bags. Once cleared through customs, Soldiers remain in the sterile area until they board the aircraft.
Unit representatives coordinate inspection times with customs officials not later than five days prior to departure date.

POE Staging Area

5-13. Intra-theater transportation assets may move units directly to a POE staging area or to an intermediate staging area. These movements are largely determined by the distance to be traveled, size of the redeploying force, and theater capabilities. Units that were issued APS equipment usually turn it in at a separate location prior to moving to the POEs. Procedures for return of APS to storage locations are

established during redeployment planning. Refer to FM 100-17-1 and FM 100-17-2 for specific information regarding APS.

5-14. SPOE staging operations prevent congestion within the terminal area and provide space for segregating vehicles for vessel loading. This is the final en route location for preparation of unit equipment for strategic movement prior to the equipment entering the port holding area. The redeployment coordination cell monitors the flow of vehicles and equipment into the port and notifies the theater movement element when there is a backlog. The ESC/TSC establishes and operates the POE staging area and assists with opening the staging area at the POE.

5-15. Movements into the POE staging area must be carefully managed to preclude congestion and to avoid exceeding the capacity of the facility. Early planning in the assembly area ensures that units arrive at the POE on time and fill scheduled modes of transportation. Instructions directing movement to the port will come in the form of a call forward message from SDDC and is based on the availability of space in the port and the TPFDD timelines.

5-16. The theater personnel manager is responsible for establishing processing centers. The centers are responsible for strength reporting and providing personnel services and casualty operations support for all personnel departing the theater. Moreover, they verify unit manifests, coordinate manifest changes with the Air Force, and transmit final flight manifests to the appropriate major commands, personnel agencies, and destination installation commanders.

MOVEMENT TO POD

5-17. The combination of strategic airlift and sealift provides the capability to redeploy forces, albeit in different timeframes and along separate routes. Personnel are transported by strategic airlift to the destination APOD and bussed to the destination installation. Vehicles, unit equipment, and containers are moved by strategic sealift to the designated SPOD, unloaded, and transported by commercial truck or rail to the destination installation.

MOVEMENT TO HOME OR DEMOBILIZATION STATION

5-18. Once cargo arrives at the SPOD, the destination installation has the primary role of coordinating with SDDC for reception and onward movement of the cargo. The supporting installation has the following responsibilities at the POD:

- Provide download teams and drivers to support POD operations.
- Stage equipment for movement to the final destination. The equipment may be configured into unit sets, organized by type of equipment, or configured for movement by a certain type of transport.
- Provide rail loading teams.
- Coordinate for customs clearance inspections.
- Complete equipment inspections and process movement documentation.

5-19. The supporting installation is responsible for supporting arriving forces until they reach their destination and developing a reception plan. In preparation for redeployment, the installation coordinates the actions and location of required support for the arrival ports and airfields and establishes en route support sites as required by the redeployment plan.

5-20. The destination for Active Army units is normally their home station; whereas, U.S. Army Reserves and Army National Guard units return through a demobilization station. Typically, the demobilization station is the same installation that served as the unit's mobilization station.

5-21. In most instances, vehicles and unit equipment are transported to their destination by commercial transportation contracted by SDDC in coordination with the destination ITO. The ITOs receive the movement documents for all equipment that flows through their areas of responsibility. They receive the commercially delivered assets, process all paperwork, and release the equipment to the unit. All of the cargo is monitored by using the transportation control number (TCN) as the reference.

5-22. The installation coordinates with SDDC and other affected agencies to provide commercial transportation and MHE as needed and monitors operations, resolves problems, and complete reports as required to higher headquarters and other coordinating organizations. Specific functions of the destination installation include—

- Activate emergency operations center as required.
- Notify supporting units and key agencies, including Public Affairs offices and family readiness groups.
- Activate Soldier readiness point.
- Open billets, dining halls, and morale, welfare, and recreation (MWR) facilities as required.
- Conduct reception for returning units.
- Process personnel.
- Provide maintenance, transportation, and MHE support.
- Establish turn-in of weapons and special equipment.

5-23. The unit performs the following tasks upon arrival at the destination:

- Conduct personnel processing (including legal, financial, and medical processing), review personnel records, and conduct personal affairs briefings.
- Download and receive unit equipment.
- Develop and implement a maintenance plan to return equipment to predeployment condition, including technical inspections, preventive maintenance, oil analysis, and calibration.

Appendix A

Responsibilities

Deployment and redeployment operations occur through the efforts of numerous agencies and individuals and the following paragraphs outline their roles and responsibilities.

A-1. **U.S. Transportation Command (USTRANSCOM)** is a functional combatant command whose responsibility is to—

- Provide air, land, and sea transportation and common-user port management at air and sea POE and/or POD for DOD.
- Exercise COCOM of all assigned forces.
- Exercise responsibility for global air, land, and sea planning.
- Provide deployment estimates and total lift asset availability.
- Act as the DOD focal point for items in the transportation pipeline.

A-2. The **Joint Deployment and Distribution Operations Center (JDDOC)** is a forward deployed element of representatives from the combatant command, USTRANSCOM, Defense Logistics Agency (DLA), and the service departments to provide the visibility and synchronization of personnel and materiel moving in DTS. They typically collocate with the theater distribution staff and have the ability and authority to reach back to their parent organizations to promote integration between the strategic and theater systems for deployment and distribution. The JDDOC maintains visibility of all of the personnel, supplies, and equipment moving into the theater and manages the distribution in accordance with the supported COCOM's priorities.

A-3. **Air Mobility Command (AMC)** is a major command of the U.S. Air Force and provides common-user airlift to deploy, employ, sustain, and redeploy U.S. Forces on a global basis. Additionally, AMC is the single port manager of common-user APOEs and/or APODs. The CRG provides minimum essential on load, offload, and enroute AMC mission support during deployment, employment, and redeployment operations. The CRG is also responsible at the APOE for aircraft movement control, communications, technical supervision of loading, and aircraft staging.

A-4. The **Military Sealift Command (MSC)** is an Operating Force Command of the U.S. Navy and provides common-user and exclusive-use sealift to deploy, sustain, and redeploy U.S. Forces on a global basis. MSC adjusts and controls the total number of ships under its C2 to meet demand. Under normal peacetime conditions, the MSC force consists of government-owned ships as well as privately-owned ships under charter to MSC. When demand increases, MSC can expand its fleet by acquiring additional sealift from a variety of resources and acquisition programs.

A-5. The **Surface Deployment and Distribution Command (SDDC)** is an ASCC of the U.S. Army and responsible for common-user land transportation and common-user ocean terminal services to deploy, employ, sustain, and redeploy U.S. Forces. SDDC is also DOD's single port manager (SPM) for common user SPOEs and SPODs. The SDDC—

- Determines movement requirements and coordinate vessel selection with MSC.
- Prepares and issues port call messages.
- Manages the activities of deployment support brigades (DSB), transportation terminal battalions/brigades (TTB), and PSAs.
- Receives, stages, and transships unit equipment.
- Establishes and directs port communications, safety policies, and physical security procedures.
- Assists ITOs in shipping unit equipment and supplies to the POE.

- Obtains commercial containers.
- Develops stow plans, supervises vessel loading, inspects vessel readiness, and provides documentation.

A-6. The **deployment support brigades (DSB)** are U.S. Army Reserve (USAR) units under the operational control of the SDDC that provide deployment support to deploying units, specifically to—

- Provide subject matter experts for documentation.
- Provide assistance on load planning and loading.
- Establish equipment inspection points.
- Provide HAZMAT assistance.
- Provide liaison between installations and POE.

A-7. The **transportation terminal battalions/brigades (TTB)** are USAR units assigned to SDDC. They are command and control elements that rely on existing personnel and equipment to operate the terminal and provide SDDC with the ability to increase the number of ocean terminals. The TTB—

- Establishes and maintains liaison with various port agencies.
- Supervises port operations.
- Prepares and maintains terminal operations plans.
- Controls flow of cargo through the port.
- Prepares and updates vessel stow plans.
- Contracts additional stevedores and MHE as required.
- Ensures ITV interrogators are in place and operating.

A-8. **U.S. Forces Command (FORSCOM)** is the Department of Army Executing Agent for CONUS force mobilization, deployment, and demobilization planning and execution in the Army Mobilization and Operations Planning and Execution System (AMOPES), The FORSCOM Mobilization and Deployment Planning System (FORMDEPS) provides standardized policies and procedures for ASCCs to ensure coordinated action in mobilizing and deploying Army Forces to support approved operation plans and contingency operations.

A-9. The **Installation Management Command (IMCOM)** is a Direct Reporting Unit of the Assistant Chief of Staff for Installation Management, Headquarters, Department of the Army, and is responsible for managing Army installations in support of readiness and mission execution (including deployment). In the CONUS installation, commanders have specific support responsibilities for movement planning and execution. In overseas commands, support groups have similar deployment support responsibilities. Installation responsibilities supporting deploying units range from maintaining a departure airfield control group (DACG) and port support activity (PSA) capability to providing marshaling area support. Each CONUS installation is required to appoint a unit movement coordinator (UMC) as the unit's contact within the installation staff for deployment transportation support and instructions.

A-10. The **arrival/departure airfield control group (A/DACG)** is an ad hoc organization provided by the supporting installation and is designed to assist AMC and the deploying unit in receiving, processing, and loading personnel and equipment. Its composition is mission dependent but cargo transfer companies are best suited for the role. In CONUS, the DACG is a shared responsibility between IMCOM installations and FORSCOM units.

A-11. The **port support activity (PSA)** is a flexible support organization designed to assist SDDC with the loading or discharge of cargo, vehicles, and equipment at seaports. Normally SDDC verifies the resources required and provides them from their own resources or contracts for them, however unit support requests beyond standard port operations (aircraft assembly/disassembly, convoy reception) are the responsibility of the requestor. The PSA is operationally controlled by the military port or TTB commander.

A-12. **The unit movement coordinator (UMC)** located in the ITO—

- Assists units in preparing, maintaining and executing deployment plans, UMD, and related documentation.
- Provides deployment guidance.
- Assists units with the OEL and UDL.
- Processes convoy clearances and special hauling permits.
- Verifies strategic lift requirements and assists in designating loading sites and times.
- Assists in identifying and obtaining BBPCT materials, containers, and pallets.
- Coordinates MHE.
- Ensures unit equipment is properly marked.
- Supports unit movement at railheads and airfields.
- Coordinates airlift requests.
- Reviews and approves deployment plans annually.
- Provides in-transit visibility support to deploying units.
- Conducts annual movement planning and execution workshops for Active Army unit movement officers.

A-13. The **mobility officer (MO)** is a skilled technician trained to provide the commander with embedded deployment expertise who—

- Advises the warfighting commander on all facets of the joint deployment process.
- Executes the transmission of movement requirements in the Defense Transportation System.
- Develops and conducts unit training on the tactics, techniques, and procedures (TTP) associated with unit movements operations.
- Identifies and remedies force projection and strategic deployment deficiencies.
- Plans and coordinates the deployment and redeployment.
- Provides distribution management expertise while in the area of operations.

A-14. The **unit movement officer (UMO)** is appointed at the company and battalion to plan, train, and execute the actions necessary to deploy when ordered. Commanders appoint, in writing, an officer or senior NCO (E6 or above) and an alternate (E5 or above) to—

- Prepare and maintain unit movement plans and unit load plans.
- Prepare and maintain accurate and current unit movement data using deployment information systems.
- Coordinate and conduct unit movement training.
- Ensure unit personnel are trained and available to handle and certify hazardous materials.
- Coordinate for support of unit movements.
- Ensure packing lists are properly prepared.
- Prepare requests for convoy clearances and special hauling permits.
- Ensure convoy vehicles are properly marked.
- Ensure cargo is properly marked and labeled for shipment.
- Maintain a deployment binder.

Appendix B

The Army Deployment Process

The Army deployment business process has transitioned from the Transportation Coordinators Automated Command and Control Information System to the Transportation Coordinators Automated Information for Movement System (TC-AIMS II)—Joint Force Requirements Generator II (JFRG II) concept. This appendix outlines the TC-AIMS II—JFRG II process.

B-1. The Army deployment process must satisfy the CJCS requirement to develop an accurate TPFDD for the first 7 days of deployment within 72 hours after initial deployment instructions are received by the units. The TPFDD is a collection of movement requirements data to support contingency operations. The TPFDD includes a listing of what, when, where and how equipment and personnel are to be moved. The deployment data processed through the current or interim deployment systems into JOPES allows transportation and operational planners to perform a transportation feasibility analysis. This analysis of an OPLAN's TPFDD determines supportability in terms of the type and amount of strategic lift assets required to accomplish planned movements within specified movement dates.

B-2. TC-AIMS II is the designated single, joint transportation management system for the deployment of units and movement of day-to-day cargo within the DTS. It includes automated support to assist unit commanders to create, maintain, manage, and update unit equipment, personnel lists, and deployment databases. Additionally, TC-AIMS II will offer the user the ability to interface with defense aircraft and surface automated load-planning systems, such as Automated Air Load Planning System (AALPS) and Integrated Booking System (IBS), critical when preparing detailed plans during contingency operations. Interface capabilities will allow deployment execution requirements to be reflected by exporting planned data to JFRG II for eventual import into JOPES.

B-3. JFRG II is a GCCS application designed to support strategic force movement and sustainment. Most importantly to the Army, JFRG II will replace Computerized Movement Planning and Status System (COMPASS) as the interim JOPES feeder system that passes TPFDD requirements from JOPES into TC AIMS II and the sourced UDL back into JOPES. Fielding TC-AIMS II and JFRG II should occur concurrently to capitalize on the system's capability to support the 72-hour TPFDD development process.

B-4. FORSCOM responded to the fielding of Block 2 of TC-AIMS II with the process described below and depicted in figure B-1. Block 2 features the same software and functionality as Block 1 but moves to Web-enabled version of the system (Enterprise). This allows users to access the system and perform their unit move operations from anywhere in the world, provided they have an Internet Explorer browser, a DOD-issued Internet Protocol (IP) address, and an authorized user-identification and password. The Enterprise uses Web software called CITRIX to allow users to access the TC-AIMS II database. This move to an Enterprise permits units to more easily share information and pass data between higher and lower echelons and other interface partners.

B-5. The step-by-step sequence for developing and sourcing a TPFDD is as follows:

- Step 1. The TPFDD is created based on coordination between FORSCOM, the supported command, and the deploying unit. FORSCOM creates a plan in JOPES outlining the requirements of the COCOM.
- Step 2. FORSCOM performs Air Gap procedures and emails the unclassified JFRG file to the installation. The installation creates a plan on the TC-AIMS Enterprise server and imports the JFRG file. The installation then notifies units the plan is ready for sourcing.
- Step 3. Units with TC-AIMS source the plan and notify higher headquarters that their sourcing data in the form of a UDL has been loaded onto the server.

- Step 4. Installations review and export files to IBS/AALPS.
- Step 5. The installations export the source data simultaneously to COMPASS (for a data quality check) and JFRG. It should be noted that once JFRG is capable of performing the edit checks, the use of COMPASS will be discontinued.
- Step 6. FORSCOM takes the COMPASS export, updates the TPFDD in JOPES, and notifies the supported commander.

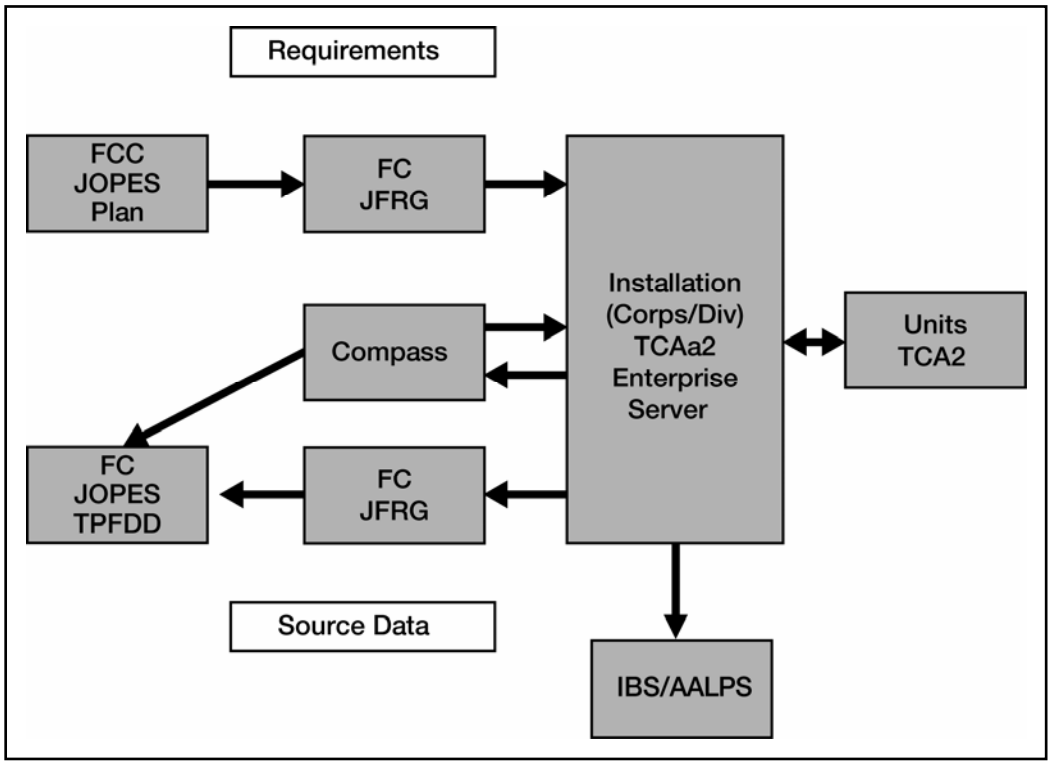

Figure B-1. TC-AIMS II (Block 2) deployment process

Appendix C

Automated Mobility Systems

This appendix presents an overview of automated mobility systems that may be used to plan and execute deployment and redeployment operations.

SYSTEM DESCRIPTIONS

C-1. **Automated Air Loading Planning System (AALPS)** is a knowledge-based expert system that assists users in the complex task of planning and execution of aircraft loads for all types of deployments. It has been selected as the aircraft load planning system for the DOD. AALPS operates on Pentium computers and is currently fielded to Army, Air Force, Navy and Marine Corps units throughout the continental United States (CONUS), Europe, and the Pacific. AALPS performs air load planning and execution for contingency planners and force designers. This entails the use of preplanned data (estimates) and the use of actual data for both "real-world" and "what-if" scenarios. AALPS is used for estimating airlift requirements (by specific aircraft type and delivery method), producing U.S. Air Force (USAF) certified "flyable" load plans, and providing airlift/movement summary data and load reports ranging from a single mission to full-scale division deployments.

C-2. **Automated Movement Flow Tracking System (AMFT)** is a developmental installation-level system, which provides deploying unit commanders and staffs with continuously updated deployment statuses. It is a tool to plan movements of unit equipment and personnel through the successive installation processing points to meet load-out schedules.

C-3. **Automated Manifest System (AMS)** is a Defense Logistics Agency (DLA) initiative that utilizes laser-readable optical memory cards in place of paper packing slips on the exterior of shipment containers. The card contains a detailed list of the contents of the multi-pack, including transportation control number (TCN), national stock numbers, and document numbers. The AMS is used at depots; central receiving points (CRP); and supply support activities (SSA), such as the direct support unit in a forward support battalion. AMS facilitates manifesting and tracking of multi-pack shipments from the depot to the CRP or SSA. AMS provides in-the-box asset visibility, and it may be used as the source of in-transit visibility (ITV) data. The AMS reader can be connected directly to the automated information system (AIS) at the receiving unit, thereby increasing the accuracy of data by automating the input of source data.

C-4. **Asset Visibility (AV)** is the capability that provides commanders, military Services, and DOD components with timely and accurate information on the location, movement, status, and identity of all supplies, equipment, units, and personnel, whether they are in transit, in-storage, or in process. AV also facilitates the ability to use this information to improve the overall performance of DOD logistics practices. The AV capability is an essential component of the overall GCSS. AV provides the capability to obtain access to distributed data across DOD, including data on nontraditional supply assets, such as program manager materiel, unit-level operations and maintenance assets, and contractor or vendor-managed materiel.

C-5. **Cargo Movement Operation System (CMOS)** is a combat support system that automates and streamlines installation-level cargo movement processes for both peacetime and deployment cargo. Workstations in ITO functional areas support one-time data capture for the preparation of documentation for all modes of shipment. The specific functional areas supported are the receipt, preparation, and movement of cargo; the reporting of movement to command and control elements for ITV; and military airlift passenger travel. The electronic reporting of cargo movement makes CMOS a vital component of the logistics community's effort to provide in-transit asset visibility. Ultimately, the CMOS capabilities will migrate into TC-AIMS II and provide electronic reporting of cargo movement at the installation level.

C-6. **Computerized Movements Planning and Status System (COMPASS)** is an Army information management system that supports validation of unit movement requirements data prior to Joint Operation Planning and Execution System (JOPES) update. The system was designed to support unit movement planning and requirements for Active Army and Army Reserve units. This system provides the automated unit equipment list containing unit movement, which reflects the go-to-war equipment profile of deploying units.

C-7. **Department of the Army Movement Management System–Redesigned (DAMMS–R)** provides managers within the theater visibility of import, export, and intra-theater cargo movements. It provides mode managers asset accountability and asset visibility. Data is provided to movement managers, mode operators, and materiel managers to expedite the onward movement of cargo and personnel.

C-8. **Global Air Transportation Execution System (GATES)** automates support for receipt, movement and billing of cargo and passengers. GATES provides the Air Mobility Command, the DOD, and commercial partners with an automated management system. It is used to process and track cargo and passenger information, support management of resources, provide logistical support information, generate standard and ad hoc reports, and provide message routing and delivery service for virtually all aircraft movement data. In the force projection scenario, GATES is the AIS that send aircraft arrival and departure ITV data to GTN.

C-9. **Global Combat Support System (GCSS)** is a DOD-level initiative to ensure interoperability across CS AIS functions, as well as between CS and command and control (C2) AIS functions. It is neither an acquisition program nor a standard information system, but a strategy for enhancing CS effectiveness within and between the Services. GCSS requires each Service to implement common technical standards for their AIS in accordance with the Defense Information Infrastructure Common Operating Environment. This includes the use of standard data elements to improve interoperability and understanding when sharing information among the Services during joint operations.

C-10. **Global Command and Control System (GCCS)** is the key command, control, communications, computers, and intelligence (C4I) system. It is a system of interconnected computers that provides an integrated C4I capability to the entire joint community. It provides up to SECRET-level information from a variety of applications that have migrated or are in the process of migrating from other systems. GCCS is used by the Joint Planning and Execution Community to document movement requirements, transportation closure, and other significant force projection events. GCCS is flexible enough for combat operations or humanitarian assistance missions. GCCS integrates deliberate and crisis action planning, force deployment and employment, fire support, air operations and planning, intelligence, and force status. It is designed to allow the expansion of planning and execution capabilities as new systems are designed. GCCS is based on a common operating environment allowing greater software flexibility, reliability, and interoperability with other automated systems. GCCS receives logistics information from Asset Visibility (AV), GCSS, and GTN.

C-11. **Global Transportation Network (GTN**) is an automated C2 information system that provides transportation users and providers with an integrated view of transportation information. It gives USTRANSCOM the ability to perform C2 operations, planning and analysis, and business operations to meet customer requirements. GTN provides ITV for the DTS. GTN collects and integrates transportation information from selected DOD systems for use by transportation data customers, the joint staff, combatant commanders, and the Services. The system provides these users the ability to monitor movement of Forces, cargo, passengers, and patients and the movement of military and commercial airlift, sealift, and surface assets. GTN is accessible on the World Wide Web.

C-12. **Integrated Booking System (IBS)** is the lead SDDC execution system of the DTS for the movement of military cargo by surface overseas. IBS manages and conducts these responsibilities by providing a single worldwide automated booking system to support the peacetime and wartime movement of sustainment cargo in an efficient and timely manner. IBS allows shippers to automatically book requirements instead of manually processing them through SDDC booking offices. Automatic booking of requirements reduces the level of manual intervention required. TC AIMS II interfaces with IBS for movements originating from the CONUS. Unit DELs can be pushed to IBS to create the export traffic release request in IBS.

C-13. **Integrated Computerized Deployment System (ICODES)** is an AIS designed to support cargo management and shipload planning and stowage at common-user and military ocean terminals. Responsibility for this function is shared among the SDDC and FORSCOM Active Army and Army Reserves. The U.S. Navy and U.S. Marine Corps also perform this mission as well as loading and stowing functions for primarily tactical land-based and sea-based operations. ICODES provides the user with decision-support capabilities for planning and executing the ship loading and stowage of military cargoes including unit equipment. The planning function enables the user to execute the loading and stowage of military cargoes for movement to support DOD objectives during training, humanitarian assistance, pre-position, and contingency operations. The reporting and networking functions support the mission to provide commanders with strict accountability of these cargoes during loading, transshipment, and discharge at the POD.

C-14. **Joint Force Requirements Generator II (JFRG II)** is a TPFDD manipulating and editing application designed to facilitate deployment planning and execution while in garrison or forward deployed. It sources, analyzes, and refines TPFDDs and is capable of remote, low bandwidth operation or client/server operations via GCCS. It imports and exports JOPES executable TPFDDs and provides an interface between unclassified unit deployment planning systems and classified JOPES. JFRG II has been designated as the interim interface for all data movements between JOPES and TC-AIMS II.

C-15. **Joint Operation Planning and Execution System (JOPES**) standardizes the joint planning system used to execute complex multi-Service exercises, campaigns, and operations. It is a combination of joint policies, procedures, personnel, and training. JOPES is also a reporting structure supported by automated data processing systems, reporting systems, and GCCS. It is a GCCS application and furnishes joint commanders and war planners at all levels standardized policy procedures and formats to execute a variety of required tasks. JOPES assists planners in development of OPLANs, contingency plan, functional plans, campaign plans, and operations orders. JOPES is used for TPFDD management and development. It defines requirements and gains visibility of the movement of forces into the combatant commanders' area of responsibility. This system assists planners with the development of detailed deployment requirements, logistics estimates, transportation requirements, and assessment of the OPLAN for transportation feasibility. JOPES also tracks, plans, prioritizes, and monitors deployment statuses and requirements.

C-16. **Radio Frequency Identification (RFID)** is a family of technologies that enables hands-off processing of materiel transactions for cargo deploying through the DTS. RFID provides operators a means to remotely identify, categorize, and locate materiel automatically within relatively short distances. Data is digitally stored on RFID transponder devices, such as tags or labels. Remote interrogators (located a few inches to 300 feet [91.44 meter] from the transponder device) electronically retrieve the data via electromagnetic energy (radio or microwave frequency) and send the data to the AISs. The technology is divided into two categories of data storage and retrieval systems: passive and active. Active RFID systems are omni-directional and require moderately expensive, high-capacity transponder devices. Active devices are effective portable databases and facilitate the rapid transfer of data to AISs with standoff capability. Passive systems generally require line-of-sight interrogation of powerless, inexpensive, low capacity transponder devices. Passive devices are adaptable for use at the item, case, and pallet level.

C-17. **Mobilization Movement Control System (MOBCON)** is an automated system that assists in scheduling and deconflicting convoys in CONUS. It produces convoy clearance requests required by state authorities to approve convoy movements from a unit's origin to the POE. MOBCON models convoy routes, selects the optimum route, and deconflicts convoy movements, providing commanders with visibility of the vehicles moving between installations. MOBCON provides the means to control military traffic flow and eliminate bottlenecks and traffic conflicts on the roadways. It also has the capability for the staff to plan for loading out aircraft and ships. The system will eventually interface with TC-AIMS II.

C-18. **Single Mobility System (SMS**) integrates numerous independent command and control systems supporting DTS to provide visibility and a collaborative planning environment. SMS provides functional users and mission planners a unified method to access mobility planning information by providing a single integrated view of TRANSCOM and the TCCs systems data.

C-19. **Tactical Personnel System (TPS)** is an automated tactical personnel strength management system. TPS provides the field with an application that can serve as a deployment-manifesting platform for all military personnel, civilians, and foreign nationals.

C-20. **Transportation Coordinator–Automated Command and Control Information System (TC-ACCIS)** is the current information management and data communications system that Army units use to plan and execute deployments. TC-ACCIS users include commanders, installation transportation officers, division transportation officers, and unit movement officers. It has a direct interface with FORSCOMs COMPASS and through COMPASS to the JOPES. TC-AIMS II will replace TC-ACCIS as the primary interface for UMD.

C-21. **Transportation Coordinators' Automated Information for Movement System II (TC-AIMS II)** will be the DA system supporting all unit and nonunit installation deployment and redeployment operations once it is fully fielded. It is designed to be a system for UMOs, planners, movement controllers, and transportation operators at all levels to interface with virtually all the current and planned deployment support automated systems. Deploying commanders and their staffs will use TC-AIMS II to translate information about the mission into detailed movement plans. This translation occurs in a short timeframe—capturing the continual changes to available lift assets, mission details, and unit assets allocated to support the mission. Deployment managers will use TC-AIMS II to coordinate strategic lift missions via air and water; schedule unit convoy movements; schedule interrelated deployment events; prepare load plans for vehicles, rail cars, aircraft, or ships; prepare military documentation; and account for personnel and equipment. Deployment managers will also use TC-AIMS II for documenting paper authorization to expend funds and validate services. TC-AIMS II will support the UMO in managing deployment data, creating deployment plans, and monitoring deployment status throughout all phases of the deployment. The one system will permit the UMO to deploy the entire unit through multiple movements without having to re-enter data for each new step in the deployment process. TC-AIMS II will replace TC-ACCIS as the Army's unit source data system.

C-22. **Worldwide Port System (WPS)** is the SDDC worldwide unclassified system for managing export and import of DOD cargo at water ports. It provides detailed data concerning items of cargo arriving, departing, and on-hand at the water terminal. WPS collects cargo data for surface movements; captures receipt, staging, and loading data at ports; and generates the ship manifest/booking upon completion of vessel loading. WPS supports ITV for general cargo and unit moves. It produces those reports necessary for terminal operations and generates the Defense Transportation Regulation ocean cargo manifest. WPS produces and reads/interrogates Automated Information Technology data storage devices (bar code and RFID) through a business process server. WPS receives advanced data from TC-AIMS II and IBS and provides ITV data to GTN. For other than CONUS movements, WPS receives the deployment cargo requirements from TC AIMS II to assist the Military Cargo Ocean Booking Office with scheduling ships.

Appendix D

In-Transit Visibility

Commanders face many challenges during deployment, and one of their major concerns is maintaining visibility of forces in the pipeline. ITV is intended to provide them with the information necessary to maintain the status of in-transit forces and to redirect and support forces. Effective management of deployment operations can be enhanced with automatic identification technology (AIT). AIT is a suite of enabling technologies that provides timely and accurate ITV data when combined with Web-enabled automated information systems (AIS). This appendix outlines the components and structure of an AIT system used to maintain visibility of forces during deployment. In addition AIT, responsibilities are laid out for the principal deployment participants.

AIT SYSTEM

D-1. The Army will deploy in a joint environment, and there are numerous AIT devices available within DOD and the Army to support deployment missions. These devices capture and report arrivals and departures to GTN. Basic components of the AIT system include—

- **Data storage device**. An AIT data storage device containing essential transportation and supply data. It is printed or created and is then attached to equipment. The information on the AIT data storage device is also present in AIS and is passed to Web-enabled AIS that provide global asset/movement visibility. The Army currently uses RFID tags and MSLs as the data storage devices for deployment.

Figure D-1. Savi RF tags

- **Data collection device**. As equipment moves through the deployment pipeline, the AIT interrogators, scanners, and readers collect data on the storage device. They provide an efficient, rapid, and virtually error free collection of movement data.

Figure D-2. Interrogator

- **Communication/processing system**. After collecting the data on the storage device, the interrogator, scanner, or reader passes the information to a host automated information system. The host automated information system passes the data to a Web-enabled worldwide information system that provides near real-time in-transit visibility and force tracking data to the logistics and warfighting communities.

D-2. Radio frequency identification combines the features of a portable data collection device and a two-way radio. RF tags contain information that can range from a permanent identification number to variable data. Information can be written to tags using a fixed interrogator, a tag docking station, and a hand held interrogator (HHI). After the initial data is written to the RFID tag, the data is passed from the host AIS to the regional ITV server. Once the tag is attached to a piece of equipment, pallet, or container and passes through the system, the interrogator sends out a RF signal that "wakes up" the tag. The tag then transmits information back to the interrogator. The interrogator communicates with a host computer which, in turn, passes the data to the appropriate CONUS/regional ITV server updating the status.

D-3. The RF tag is the key to having inside-the-box asset visibility. A Soldier with an interrogator can view the contents of the container/pallet/vehicle without having to open or unload them. This hands-off visibility is what sets RF tags apart from other AIT devices that require some form of intervention to capture the asset data. A major limitation of RF technology is a worldwide standard frequency. Current RF equipment employed by the Army and DOD operates on frequencies that may be restricted or not available in many of the countries where Army units can expect to deploy.

D-4. There are two primary elements necessary to achieve accurate tracking with the AIT system:

- First, the AIT infrastructure must be established throughout the deployment pipeline to capture data on the arrival and departure of forces and equipment. The data capture will be used to update AIT and force tracking records and to verify the accuracy of data received through AIS.
- Second, the initial source data must be accurate. This information is used to create AIT data storage devices (radio frequency tags and military shipping labels) and to populate GTN.

AIT SYSTEM CONFIGURATIONS

D-5. AIT systems are set up in one of two configurations: fixed or portable. Fixed or permanent configurations are installed at deployment locations that typically handle a large volume of unit equipment, cargo, or sustainment, such as aerial ports, seaports, rail terminals, intermediate staging bases, supply support activities, depots, equipment staging yards, and military installations designated as power

projection platforms/power support platforms. The actual architecture is based on many factors including projected workload, operational requirements, and established deployment and logistical operational procedures.

D-6. Portable capability in the form of portable deployment kits (PDK) are used to outfit austere locations or locations that are not used on a routine basis but require AIT support for a particular operation. PDK support deployment locations not configured permanently for AIT or may augment already instrumented locations during surge operations. The makeup of a deployable AIT kit is dependent on the nature of the AIT support requirement and existing infrastructure. The requirements may range from simple expansion of an existing capability to providing a wide spectrum of AIT support for multiple automated information systems at an austere location. When considering deployable AIT kits, the additional infrastructure requirements of power, communications, administrative support, and AIS connectivity must also be addressed. Organizations that provide PSAs, A/DACGs, or en route support sites should consider these locations as potential deployable kit sites when conducting installation surveys.

D-7. To meet the time criteria, interrelated AIT procedures must be planned and followed in all deployment operations. First, the initial source data in applicable AISs (TC-AIMS II or GCSS that feeds data to TC-AIMS II) must be accurate. This information is used to create AIT data storage devices (bar codes, military shipping labels, RFID tags, and smart cards) and to populate AISs (for example, TC-AIMS II, WPS, Global Air Transportation Execution System/Remote Global Air Transportation Execution System (GATES/RGATES), GTN and ultimately GCCS/GCSS and joint total asset visibility (JTAV). Second, AIT infrastructure must be established throughout the deployment pipeline to quickly and accurately capture data on the arrival and departure of equipment and forces. The data capture will be used to update AIT and force tracking records and to verify the accuracy of advanced information received through automated information systems.

D-8. The Army's use of AIT in a deployment operation will be based on the supported combatant commander's movement control and joint RSOI plan. The supported J4 (specifically the Joint Movement Center, if established) will develop the theater movement control and ITV plans and policies and coordinate them with supporting unified commands. The plans will be designed to enable the in-theater distribution systems to meet the JFC’s force closure requirements. ITV plans will vary based on the geographic area of operation, mission requirements, and the supporting transportation and communication infrastructures. The ASCC G4 in coordination with the G3 develops the Army's portion of the theater ITV and RSOI plans. The G4’s input to these plans includes the use of AIT and enables executing agencies to properly plan their local AIT requirements. The G3 has the responsibility for force protection and must develop the integration plan for arriving forces. Force integration is largely dependent on meeting established standards designed to determine when units are combat ready; whereas, reception, staging, and onward movement can be synchronized with a planned timeline.

AIT AND FORCE TRACKING

D-9. To produce an accurate force tracking picture for the commander, an AIT network of trained personnel and equipment must be in place at each node of the deployment pipeline to collect and report the data. Moreover, established operational procedures must outline the process for the network to capture, report, and transfer the source data and access the resulting force tracking data.

D-10. The resources of G1, G3, and G4 must be brought together to build the force tracking network. The G1 has the responsibility to establish the procedures for collecting personnel data; the G3 establishes the readiness standards and the procedures for reporting force closure; and the G4 has the responsibility to position AIT interrogator/reader devices at the appropriate locations and for collecting deployment platform data and the unit equipment and cargo associated with the platforms. The interrogation and reader devices capture and report data as the equipment arrives and departs each node when the RFID tags or military shipping labels are interrogated/scanned. The data is passed at preset intervals (usually one hour) to a local automated information system and then to Web-enabled ITV AIS. Personnel data is collected through the use of smart cards that are scanned as they arrive and depart each location. This information will also be passed to the local automated information system and then to the appropriate Web-enabled AIS.

D-11. These steps must be accomplished in order for AIT to effectively support ITV of deployment operations. AIT by itself is not the solution for achieving in-transit visibility throughout the deployment and redeployment process. When combined with automated information systems, re-engineered operational procedures (business processes) and all critical staff players are engaged in force tracking the AIT suite of capabilities significantly improving the accuracy and speed of ITV reporting. These capabilities can provide detailed, accurate, and timely information about the location of personnel, unit equipment, and sustainment cargo as they move from fort to foxhole and back.

CAPTURING INITIAL SOURCE DATA

D-12. AIT is dependent on accurate initial source data. If advanced data in automated information systems is not accurate or does not match the information on AIT data storage devices, the equipment may be pulled from the normal flow and processed manually. Meeting the DOD AIT implementation plan time standards is only possible if equipment and personnel are correctly labeled or tagged before initial movement; matching data is resident in automated information systems.

D-13. Accurate and complete initial source data must be entered in automated information systems before the deployment begins. For units, this means ensuring the UDL in TC-AIMS II is accurate and up-to-date. In addition, plans must be established to ensure MSLs and RF tags are produced using the data in TC-AIMS II. Once produced, these AIT data storage devices must be attached to the proper piece of equipment and then scanned/interrogated to verify readability and accuracy. Commanders must ensure that every Soldier has an updated Smart Card after completing the Soldier readiness process. For passenger movements, these cards will be used to manifest and account for Soldiers at arrival and departure locations throughout the deployment operation.

D-14. Once source data is verified, plans and procedures must be in place to ensure the information is passed to other automated information systems (TC-AIMS II at higher headquarters, the installation, and WPS and GATES/RGATES at POEs), GTN, and other appropriate Web-enabled asset tracking systems. After initial source data has been provided to automated information systems and proper AIT data storage devices have been produced, manual means to input similar information can be avoided.

UNIT RESPONSIBILITIES

D-15. The key to the use of AIT as a deployment enabler is for units to—

- Incorporate AIT considerations in the unit deployment plan.
- Ensure the deployment equipment list is current.
- Label/tag deploying equipment properly.
- Ensure Soldiers have a current Smart Card.

D-16. The UMO will use TC-AIMS II to create an accurate UDL that identifies all items to be deployed. Units scheduled to draw Army pre-positioned stocks will upload the equipment list from the automated battle book provided by the Army War Reserve Deployment System (AWRDS).

D-17. Prior to departure from home station, the UMO ensures that all movement data in TC-AIMS II is accurate and forwards data to the supporting installation and higher headquarters. The installation unit movement coordinator (or the Army Command/ASCC-designated staff/agency) will review the file. When the review process is complete, the file will be passed to JFRG II and then to JOPES. USTRANSCOM will use this information to schedule strategic lift assets.

D-18. One-time capture and passing of source data between AISs is the preferred method for meeting in-transit visibility and force tracking timeliness standards. All deployment nodes use this data to update their automated information systems for ITV.

MARKING STANDARDS

D-19. Creating the tags and labels correctly is important, but the effort is wasted if they are not properly fastened to the equipment in a uniform manner. Positioning tags and labels on vehicles and equipment is as follows:

- **Vehicles**. Vehicles will be marked with one RF tag attached to the grill or front of the bumper using nylon zip ties and two MSLs—one attached to the left front bumper (driver's side) and one to the left door (driver's door).

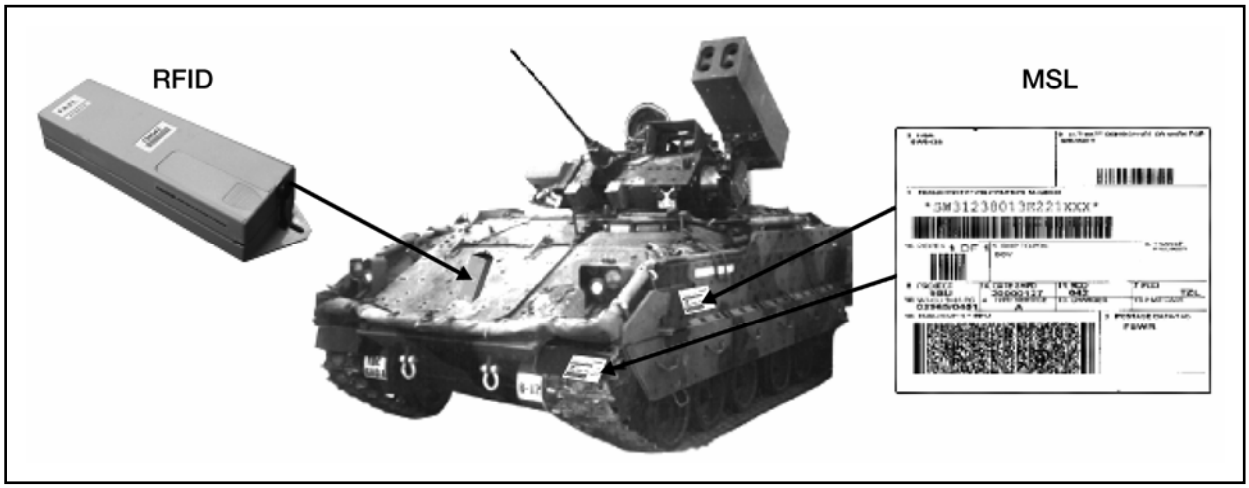

Figure D-3. Vehicle marking

- **Containers.** Containers will be marked with one RF tag attached to the locking bar on the upper right side of the container using nylon zip ties and two MSLs—one attached to the door and one attached to the right side of the container (as you look at the door).

Figure D-4. Container marking

- **Pallets.** Pallets will be marked with one RF tag attached to the side of the pallet using nylon zip ties and two MSLs—one attached to the side of the pallet and one on the adjacent side. Ensure that both the RF tag and MSLs are on the outside of any protective wrapping.

Figure D-5. Pallet Marking

- **Other Items.** Other items will be marked with one RF tag attached near a MSL with nylon zip ties and two MSLs as described in preceding paragraphs. They will be mounted 2.5 feet (0.762 meter) to 6 feet (1.828 meter) off the ground on vehicles and 2.5 feet off the ground on items that will be loaded on vehicles for transport. The labels should be positioned so that they can be readily scanned.

D-20. After military shipping labels are attached, the unit should verify that they are readable. Additionally, the RFID tag battery should be checked and replaced if necessary.

CONSOLIDATING UNIT EQUIPMENT FOR MOVEMENT

D-21. AIT interrogators/readers can be used to capture the source data and improve asset visibility of containers, multi-packs, pallets, and other consolidated shipments. As units load equipment into containers or build pallets, the supply accountability bar codes can be scanned using the TC-AIMS II hand held interrogator/reader. After the packing is complete, the data can then be used to generate a packing list and burn a RFID tag. The RFID tag contains a detailed listing of all the unit equipment consolidated within the container. The RFID tag is then attached to the consolidated shipment for in-transit visibility tracking.

INSTALLATION RESPONSIBILITIES

D-22. Installations are the mainstay of deployment operations, and there are numerous AIT functions performed by various installation activities that support and enhance deployment. Plans must be in place defining the respective AIT responsibilities to ensure that the most accurate data is entered into the AIS in a timely fashion. The foremost installation AIT tasks are—

- Install and maintain AIT interrogators/readers.
- Ensure data is accurate and forwarded within established time standards.
- Confirm units have properly labeled/tagged their equipment and Soldiers have a current Smart Card.
- Implement and maintain an installation business process that is supportive of operations throughout the system.

D-23. Other AIT issues to be considered in developing an installation plan include location of source data, quality control procedures, funding, support, accountability, and training.

INSTALLATION DEPLOYMENT INFORMATION NETWORK

D-24. A plan must be in place to create a local area network (LAN) that links each installation deployment node and all headquarters possessing TC-AIMS II and associated AISs. This network must be capable of

operating 24 hours a day to support the deployment flow throughout the operation. A direct dial-up capability should be considered if a LAN is not available. In addition to linking all the TC-AIMS II and global combat support systems to this LAN, procedures must be in place to link AIT interrogators/readers that are supporting AISs. These procedures allow for the automatic capture and transfer of movement data with limited human intervention.

D-25. Installations have a responsibility to build a deployment plan for all units and equipment deploying from their location. The information used to develop the deployment plan comes from UDLs and passenger manifests. In addition to building the deployment plan, installations take the data that is rolled up in TC-AIMS II and transmitted to GTN as movements occur. The installation will be the first location where AIT data storage devices are scanned/interrogated and verified against data resident in AISs. Closely checking the AIT data storage devices of the first deploying units provide the installation and deploying commanders a benchmark to measure how well units are conducting their AIT mission. Later deploying units can be informed of AIT problems and correct deficiencies before departing the installation.

D-26. The installation must examine the deployment/redeployment process and determine the best location to install fixed and temporary AIT interrogators and readers. (See figure D–6 for a notional installation AIT laydown). Possible locations for the installation of interrogators include entry and exit gates, convoy marshaling/staging areas, loading areas, container consolidation points, ammunition supply points, vehicle scales, Soldier readiness processing sites, and passenger holding/staging areas.

D-27. Not every piece of equipment moving in a deployment will have RFID tags for automatic data capture; therefore, installations must plan for the use of hand held interrogators/readers to scan equipment. Portable readers can also be used to scan smart cards at the various personnel processing locations.

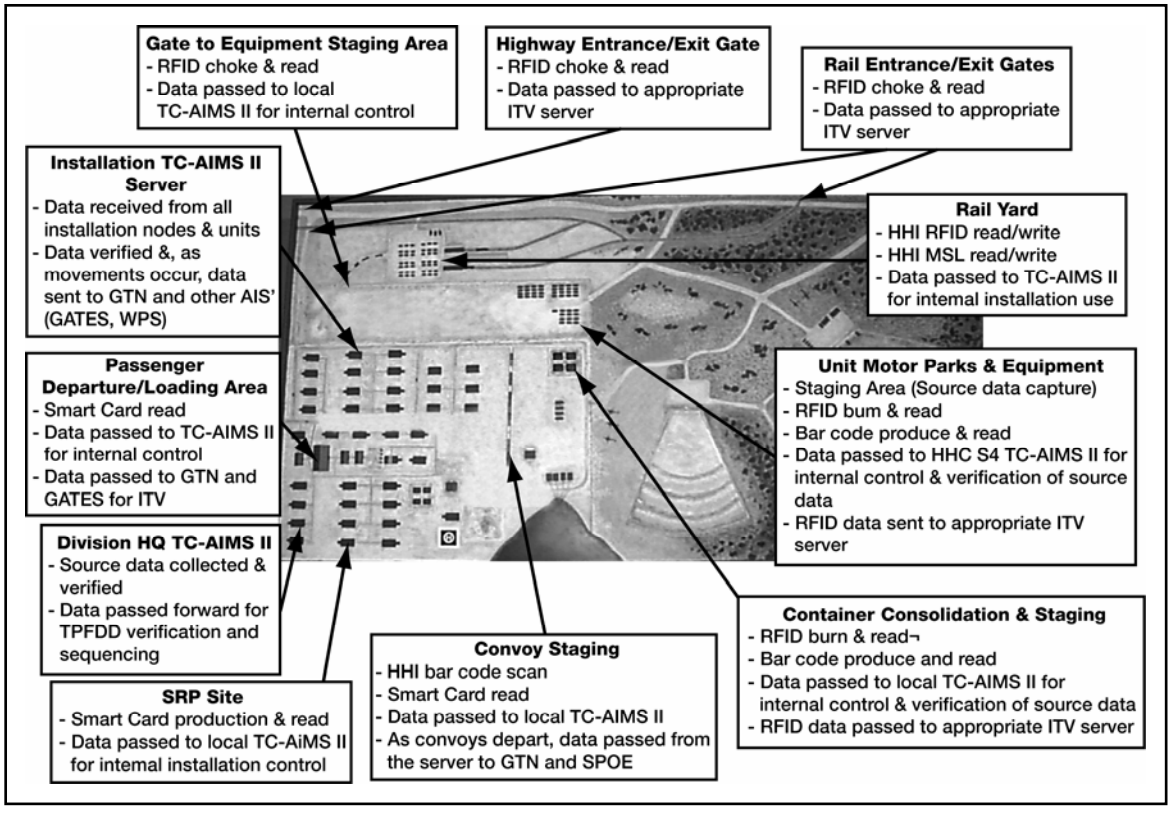

Figure D-6. Notional installation AIT laydown

AERIAL PORTS OF EMBARKATION (APOE)

D-28. There are three organizations normally found operating at the APOE (See figure D-7 for a notional laydown of APOE): an Air Force element, the DACG, and an Army movement control team. The DACG is the primary Army deployment operational element at an airfield. DACGs constituted from table of organization and equipment (TOE) units will have organic AIT equipment while ad hoc DACGs must rely on the supporting installation for the necessary AIT equipment.

D-29. The arrival and departure of all unit equipment, personnel, and sustainment air cargo moving to and from APOEs must be captured in AISs and reported to GTN. Detailed planning and coordination should be performed in advance of operations detailing AIT requirements at the APOE.

D-30. Currently, there are no standard methods of collecting and reporting the arrival of Army unit equipment and personnel at APOE gates or marshaling areas. The deploying organization in coordination with the DACG should decide how to capture data on arriving units and equipment. The DACG will then coordinate with the Air Force for specific requirements, infrastructure, and support in order to collect and report data on Army unit and equipment arrivals.

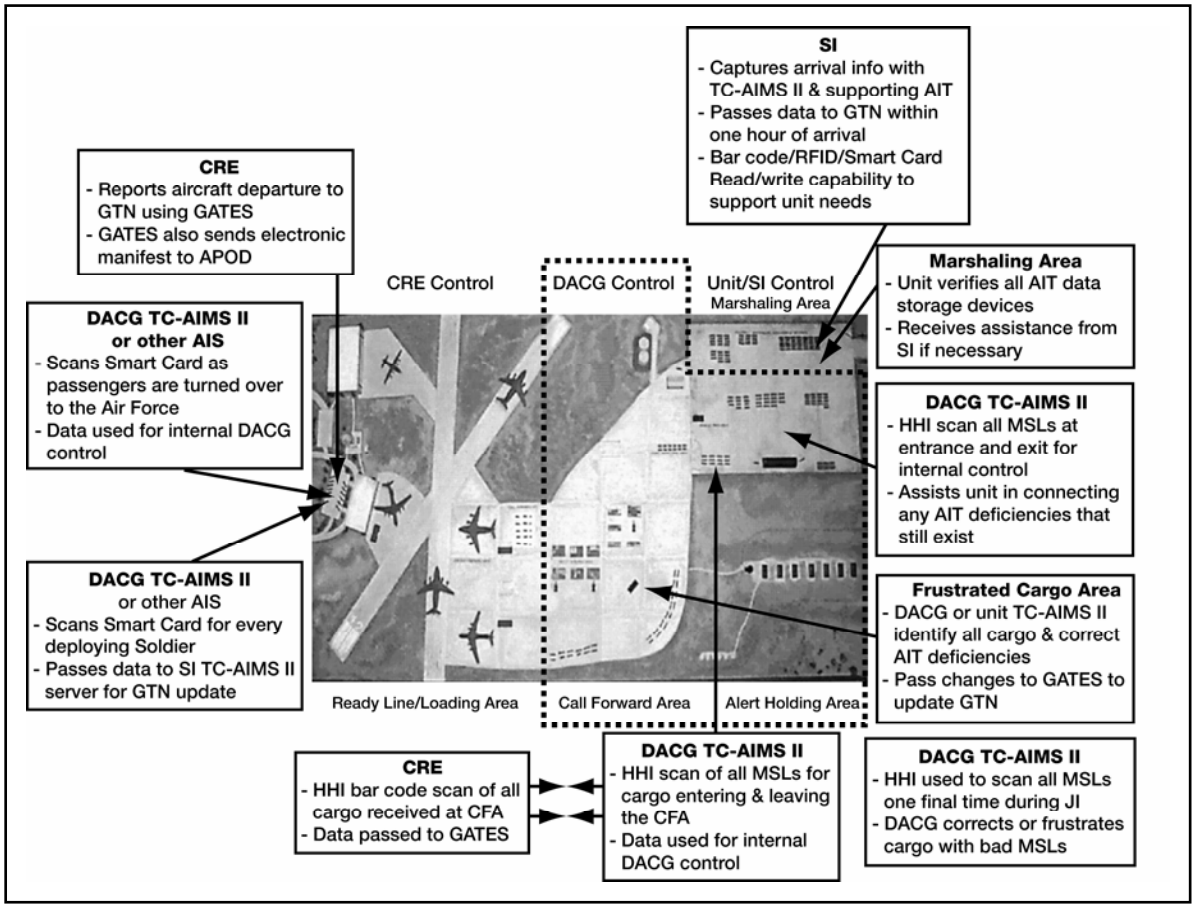

Figure D-7. Notional APOE AIT laydown

PROCESSING PASSENGERS

D-31. Passengers moving through an APOE can expect to process through a marshaling area and a passenger holding area. Marshaling areas may be located at the home station, the APOE, or both depending on the situation. While in the marshaling area, the unit verifies personnel manifests and ensures that all Soldiers have a current Smart Card. The Army support element controlling the marshaling area will scan

the arriving Soldier's Smart Card for internal accountability and for ITV reporting requirements. If this is the initial APOE arrival area for Soldiers, procedures must be established to report this data to GTN. The support element will also assist the unit in correcting any Smart Card deficiencies, scan all smart cards, and match the data against the manifest as Soldiers depart the marshaling area for the passenger holding area.

D-32. Normally, a passenger holding area will be established near the APOE that is jointly operated by the Army and Air Force. As Soldiers arrive, the Army support element will scan smart cards and verify the information against the unit manifest. If the marshaling area was at home station and this is the first time data has been collected on the arrival of passengers at the airfield, procedures must be established to pass this data to GTN. The Army support element will assist in making any final manifest corrections and when notified, pass control of deploying Soldiers to the Air Force along with an electronic copy of the personnel manifest. The Air Force element will load this electronic data into GATES and pass departure data to GTN.

PROCESSING UNIT EQUIPMENT

D-33. Unit equipment proceeds through four areas on or near the APOE when processing for deployment: by air-marshaling area, by alert holding area, by call-forward area, and by ready line/loading area. There are potential overlapping responsibilities at these locations, and prior coordination is essential to minimizing such occurrences.

D-34. An equipment marshaling area can be located on the installation, in the vicinity of the airfield, or both depending on the deployment situation. The marshaling area is normally operated by the supporting installation. A plan should be in place that clearly defines AIT responsibilities at the APOE. FORSCOM has a memorandum of understanding (MOU) in place with the Air Force addressing responsibilities at CONUS locations. While in the marshalling area and with the assistance of the support element, deploying units are responsible for preparing their equipment for shipment, to include the proper AIT tagging and marking. The Army support element will capture the arrival and departure data and report it to GTN if the marshaling area is on the airfield. Any problems or deficiencies found with AIT data storage devices should be corrected by the unit before moving to the call-forward area. After preparing their equipment for air movement, units will arrange vehicles and equipment in chalk order before movement to the alert holding area.

D-35. The alert holding area is normally on the airfield and controlled by the DACG where they will coordinate operations between the unit and the Air Force. In the alert holding area, the DACG scans the MSLs of arriving and departing equipment for internal accountability and control purposes. If the alert holding area is the first place where Army equipment is accounted for on the airfield, this arrival data must be passed on to GTN. Any deficiencies should be corrected by the unit before the equipment is moved to the call-forward area. This is the last place where Army AIT deficiencies can be corrected prior to air movement.

D-36. The call-forward area of the airfield is under the control of the DACG. It's where the joint inspection of equipment is conducted and manifests are reviewed for accuracy. The unit and the Air Force conduct a joint inspection of all equipment to ensure it is properly prepared for airlift. With assistance of the DACG, the unit corrects all deficiencies found during the joint inspection.

D-37. The ready line/loading area is under the operational control of the Air Force. The DACG passes control of Army unit equipment to the Air Force at the ready line. The Air Force ensures that the aircraft is loaded properly and sends aircraft departure and ITV data to GTN via GATES.

SEA PORTS OF EMBARKATION

D-38. The Military Surface Deployment and Distribution Command (SDDC) is the military port manager for all common-user water terminals and is responsible for Sea Ports of Embarkation (SPOE) operations. Also operating in the port complex will be Military Sealift Command (MSC), the port support activity, and the unit. Other possible operators at the port are civilian port managers and operators as well as the Army port operators and movement control team. SDDC coordinates operations between Army units and MSC and all activities with the civilian port authorities and operators.

D-39. SDDC is responsible for installing, operating, and maintaining the AIT network within the port complex. The PSA will use AIT to capture the movement of unit equipment through the port complex and to locate tagged unit equipment in the port area. PSAs constituted from TOE units will normally have organic AIT equipment, while ad hoc PSAs must rely on the supporting installations for the necessary AIT resources.

PROCESSING UNIT EQUIPMENT

D-40. Unit equipment transiting a SPOE will generally pass through a marshaling area (normally outside the port) and a staging area before vessel loading. Depending on the amount of unit equipment involved, a marshaling area may not be established. The purpose of a marshaling area is to provide a location near the port complex to assemble unit equipment and make final preparations before entering the port.

D-41. Fixed AIT interrogators/readers can be installed at port entrance and exit gates, marshaling and staging areas, container consolidation points, and off/on load sites established to assist in data capture and internal port control (See figure D-8 for a notional SPOE AIT laydown). Captured arrival/departure data will be sent to the GTN.

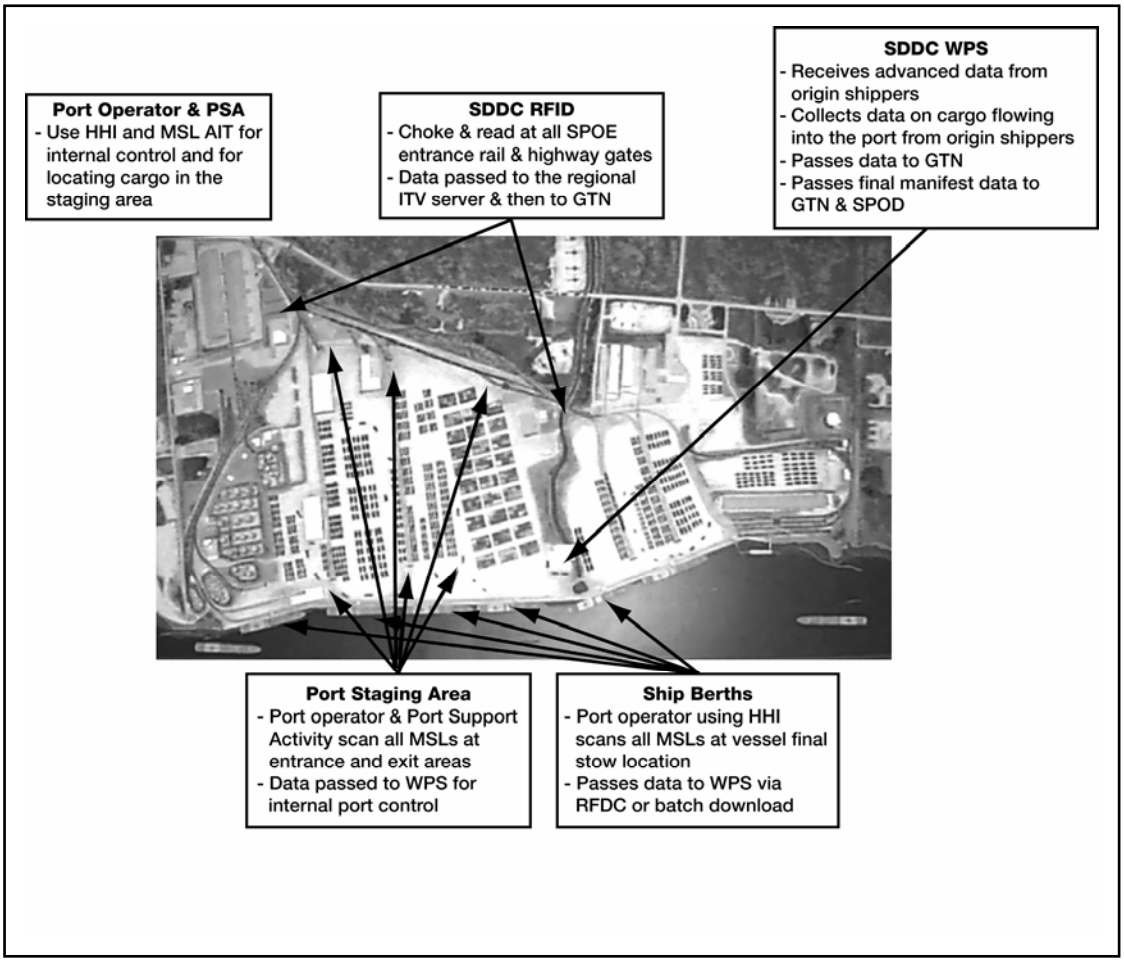

Figure D-8. Notional SPOE AIT Laydown

D-42. The staging area is the final location where equipment is assembled prior to loading the vessel. Equipment is usually lined up by piece type or in the order it is to be moved onto the ship. SDDC will control all equipment departing the staging area for vessel loading. Normally, the equipment is scanned at

the final stowage location and the data is passed to WPS and is sent to GTN in the form of a final ships manifest.

D-43. Port managers and operators will rely on hand held scanners to collect data from the MSLs and entered the data into WPS. The data will be used for internal port control of the equipment, to develop the final stow location of unit equipment aboard the vessel, and to prepare the final ships manifest.

D-44. Care must be used when establishing the location of fixed RFID interrogators. The interrogator must be properly positioned to capture the arrival and departure of all unit equipment moving past its location, while at the same time, not interrogating tags already staged. An interrogator located too close to RFID tags can query tags constantly and drain the tag batteries before the equipment is loaded.

PROCESSING PASSENGERS

D-45. A final SPOE AIT consideration is capturing the movement of personnel by ship. This can be accomplished by means of support agreements with SDDC, the Navy, or the use of organic unit AIT equipment. Planners must identify the requirement as early as possible to ensure the system is in place to capture the data and transmit it to GTN.

Appendix E

Force Protection

Army Forces are especially vulnerable to terrorism during deployment. Potential adversaries will invariably focus on perceived weaknesses giving rise to the need for a comprehensive strategy for the protection of forces. Force protection is essential to operations and protecting geographically dispersed forces once they depart the security of their installations is a unique challenge. Force protections are those actions taken to prevent or mitigate hostile actions against DOD personnel, resources, and facilities. This appendix highlights those activities that should be in place to counter the terrorist threat during deployment operations.

PRE-DEPLOYMENT

E-1. Force protection activities must occur at home station on a consistent basis for units to be prepared to face the potential terrorism threat, pilfering, or other criminal activities during deployment and redeployment. The deploying units are supported by numerous agencies in planning antiterrorism measures including—

- Movement planning.
- Intelligence gathering.
- Threat assessment.
- Security planning.
- Antiterrorist awareness training.

MOVEMENT PLANNING

E-2. Units prepare detailed movement SOPs to support unit movement planning. The SOP should define the roles and responsibilities of all unit personnel from brigade to company level. The SOP should outline preparations for all modes of movement: air, rail, sea, and highway. Functions addressed in SOPs should include risk assessments, antiterrorism/security measures, and other deployment activities. Department of the Army provides overall guidance on antiterrorism to include the rules of engagement (ROE) and desired standard of training.

INTELLIGENCE GATHERING

E-3. Pre-deployment intelligence needs can be met by using several sources. In addition to intelligence reports and pre-deployment briefings, commanders can use unit files of previous deployments, unit personnel with experience in the deployment area, and open-source Internet resources. Unit files often contain deployment history that includes after action reports and lessons learned. Open source deployment information can be obtained from Internet sites that include U.S. Government Agencies and nationally recognized news services. Commanders must realize that even the best national-level intelligence augmented by intelligence from numerous sources may still leave information gaps at the local level in remote locations where U.S. Forces are not already present. Commanders can rely on tactical intelligence capabilities in the deployment area.

THREAT ASSESSMENT

E-4. Units conduct threat assessments to determine their own vulnerability before deployment. These assessments must be conducted sufficiently in advance of deployments to allow for the development of

security procedures, the acquisition of necessary materials, the obtainment of focused intelligence, the coordination of necessary security augmentation forces, and the requisition for necessary HN support. Assessments must address rest areas, refueling locations, and movement routes.

E-5. Moreover, the assessments should provide the commander a baseline to implement appropriate antiterrorism measures to reduce and/or mitigate risk. Pre-deployment assessments must occur in a timely manner and should be incorporated in pre-deployment planning and training. These assessments will assist commanders in updating area of responsibility (AOR)-specific training and in obtaining necessary physical security materials and equipment to implement protective measures.

E-6. These assessments identify weaknesses that may be exploited and suggest options that address those weaknesses. For example, a vulnerability assessment might reveal weaknesses in a seaport's security systems, police force, computer networks, or unprotected key infrastructure, such as water supplies, bridges, and tunnels. Evaluate potential threats on the basis of factors such as capabilities, intentions, and past activities. These assessments represent a systematic approach to identifying potential threats before they materialize. However, even if updated frequently, threat assessments may not adequately capture all emerging threats. This is true when threat assessments are only based on higher-level regional assessments that do not focus on the individual rail, sea, or airport facilities.

E-7. At the theater level, component commanders provide transiting forces assessments of ports, airfields, and inland movement routes prior to their arrival. Transiting units may be required to augment component commanders with assessment personnel. This is normally accomplished with advance party personnel conducting liaison with the HN intelligence agency or security force. They communicate current local threat information to the transiting unit, enabling more effectively tailored protective measures to the specific threat environment.

SECURITY PLANNING

E-8. Units use the results of the assessments to develop security plans for self-protection while in-transit. Although emphasis must be on movements through high threat areas, commanders should not discount appropriate security measures for movements in lower threat areas. Security plans for movements through high threat areas must be completed and approved by the next higher command (at a minimum, the battalion commander).

E-9. Commanders must implement appropriate force protection measures to reduce risk and vulnerability. Advanced or on-board security augmentation should be considered for travel through high threat areas. Equipment such as advanced surveillance cameras and monitors, explosive detection devices, and blast mitigation equipment can significantly enhance a transiting units' posture against terrorist threats.

E-10. Commanders and senior Army representatives accompanying the movement are responsible to ensure security measures sufficiently address vulnerabilities. Security measures taken to establish defense and protection must be continually reviewed and progressively updated to counter the changing threat and add an element of unpredictability to the terrorist calculation. This responsibility cannot be ignored in any situation. Local security must be 24/7 to provide observation, early warning, and if necessary, live fire capability. Additionally, rest and recuperation facilities located within the operational-level commander's AO require close consideration. These facilities are frequently vulnerable due to their location and easy access. Movements may require tailored intelligence/counterintelligence support, HN assistance, or preplanned alternate routes based on the vulnerabilities associated with the movement.

ANTITERRORISM AWARENESS TRAINING

E-11. Units moving through high threat areas ensure personnel receive pre-deployment training on rules of engagement, use of force, theater threat orientation, defensive TTPs and security equipment. Training is performance oriented and provides Soldiers and leaders the training required to defend units against a terrorist threat and/or mitigate the effects of an attack. Antiterrorism awareness training must be conducted by awareness instructor and include—

- Introduction to terrorism.
- Terrorist operations.

- Communications.
- Individual protection measures.
- Terrorist surveillance techniques.
- Improvised explosive device (IED) attacks.
- Kidnapping and hostage survival.
- Explanation of terrorist threat levels and FPCON system.

DEPLOYMENT

E-12. Deploying units traditionally focus force protection efforts primarily on their deployment AO. Before arriving in an overseas region, commanders are required to submit force protection plans to the geographic combatant commander responsible for force protection of all military forces in their region. The TTPs in the deploying units' plan must match the guidance developed by the unified commander, who coordinates and approves the individual plans. This allows the commander to ensure that a unit's plan takes into account all current threats that could affect the mission and accepts or mitigates any security risks that arises.

E-13. The situation for the domestic phases of an overseas deployment is different: there may not be a designated commander with centralized force protection responsibilities similar to those of the overseas-geographic combatant commander. This may create gaps during the domestic phases of a deployment in the deploying unit's ability to coordinate individual force protection plans, identify gaps that may exist, and mitigate the identified risk. Installation Management Command provides guidance to the installations on the development of a force protection/anti-terrorism plan and the implementation and execution of force protection training.

SEA MOVEMENT

E-14. SDDC directs and coordinates this deployment of units through its SPOE by dispatching port call messages to the affected units. Port call messages provide an earliest and latest unit arrival date at the port complex to facilitate vessel loading (and sailing) to meet TPFDD requirements. These port call messages provide schedules for units to arrive at the port complex in sufficient time for the unit to process through the marshaling area (if there is one) and the staging area on a schedule that permits loading to meet vessel sailing schedules.

E-15. Because the security activities that DOD may conduct outside its installations are limited, it must work closely with a broad range of federal, state, and local agencies to ensure that adequate force protection measures exist and are executed during deployments through strategic seaports. Force protection responsibilities for DOD deployments through commercial seaports are divided among a number of DOD organizations, including the USTRANSCOM components, particularly SDDC and MSC, FORSCOM, and individual deploying units.

E-16. Port readiness committees at each strategic port provide a common coordination structure for DOD; the Coast Guard; and other federal, state, and local agencies at the port level and are the principal interface between DOD and other officials at the ports during the movement of military equipment. However, port readiness committees are focused largely on preparing for potential military movements through a port and not on day-to-day security concerns at the port. The deploying unit may have to provide supercargoes to accompany cargo aboard ships.

RAIL MOVEMENT

E-17. SDDC is responsible for planning and executing rail movements; however, the transiting unit commander retains responsibility for planning force protection measures for rail movements. The deploying unit commander makes the final determination based on security requirements and coordinates with the ITO in CONUS or the MCT OCONUS and authorized railroad representatives on guard/escort matters. Guards/escorts are armed at the installation commander's discretion. When armed guards are used,

all participating railroads must be notified. All armed guards must be familiar with the rules of engagement and trained in the use of force.

E-18. Cargo guards or escorts maintain surveillance over the military equipment during the journey and notify railroad personnel of any problems. They must be thoroughly trained on antiterrorism measures and provided current terrorist threat information. The rail cargo escorts help railroad personnel protect and maintain security of Army equipment loaded aboard trains and protect Army interests. HN support may be used when appropriate. A copy of the trip itinerary is given to the cargo escort supervisor. It includes the rail routing by specific rail companies, interchange points, and stop off points within a given rail line. The escorts are given portable radios to maintain communication with escort supervisors and other escorts. Escorts are instructed on locomotive and railroad safety. Additionally, escorts will be briefed on rules of engagement prior to the train leaving station. SDDC provides infrastructure information on surface transportation, SPOE terminal facilities, and security for deploying units while within the SPOE.

AIR MOVEMENT

E-19. The Army deploys personnel, supplies, and equipment by air through an APOE operated by the Air Force. It may be on an Air Force base or a commercial airfield. Deploying unit commanders are responsible for antiterrorism planning for movements to APOE and in the marshaling area. Army and Air Force commanders conduct joint coordination for mutual defense.

E-20. The APOE is organized into four separate areas: marshalling area, alert holding area, call forward area, and loading ramp area (See figure 3-7 for the notional layout of an APOE). Once the deploying unit moves to the alert holding area, the Air Force is responsible for force protection until the unit is released from the APOD.

HIGHWAY MOVEMENT

E-21. In those instances where the home station is less than 100 miles (161 kilometers) from the POE, the deploying unit may convoy their vehicles and equipment to the port. The unit submits the request for convoy clearance to the ITO who forwards the request to the defense movement coordinator in the state of origin. The convoy procedures outlined in FM 55-30 should be used as a guide. The moving unit is normally responsible for providing force protection and must make provisions to maintain contact with the installation operations center.

E-22. SDDC is responsible for ordering commercial trucks for movement of equipment and supplies from home station to the POE. A commercial escort service may be contracted by SDDC to provide the needed force protection when Army personnel are not available. In those situations where Army personnel escort shipments, the personnel must be briefed about the rules of engagement and provided suitable communications.

Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

AALPS	Automated Air Load Planning System
ABL	ammunition basic load
ACSIM	Assistant Chief of Staff for Installation Management
A/DACG	arrival/departure airfield control group
AIS	automated information system
AIT	automatic identification technology
ALD	available-to-load date
AMC	Air Mobility Command
AMFT	Automated Movement Flow Tracking System
AMOPES	Army Mobilization and Operations Planning and Execution System
AMS	Automated Manifest System
AO	area of operations
AOR	area of responsibility
APOD	aerial port of debarkation
APOE	aerial port of embarkation
APS	Army pre-positioned stocks
ARFOR	Army Forces
ARFORGEN	Army Force Generation
ARNG	Army National Guard
ASCC	Army Service Component Commander
AUEL	automated unit equipment list
AV	asset visibility
AWRDS	Army War Reserve Deployment System
BBPCT	blocking, bracing, packing, crating, and tie-down
BCT	brigade combat team
C2	command and control
C4I	command, control, communications, computers, and intelligence
JMC	Joint Movement Center
CJCS	Chairman, Joint Chiefs of Staff
CMOS	Cargo Movement Operation System
COA	course of action
COCOM	combatant command
COMPASS	Computerized Movement Planning and Status System
CONUS	Continental United States
CRG	Contingency Response Group
CRP	central receiving points

CUL	common-user logistics
DACG	departure airfield control group
DAMMS-R	Department of the Army Movement Management System-Redesigned
DEA	Deployment Excellence Award
DEL	deployment equipment list
DEPORD	deployment order
DLA	Defense Logistics Agency
DMC	Distribution Management Center
DOD	Department of Defense
DODAAC	Department of Defense Activity Address Code
DSB	deployment support brigade
EAD	earliest arrival date
EDRE	emergency deployment readiness exercise
ESC	Expeditionary Sustainment Command
FMI	Field Manual Interim (Army)
FORMDEPS	Forscom Mobilization and Deploymnet Planning System
FORSCOM	United States Forces Command
G1	component personnel staff officer
G3	component operations staff officer
G4	component logistics staff officer
GATES	Global Air Transportation Execution System
GCCS	Global Command and Control System
GCSS	Global Combat Support System
GSU	garrison support unit
GTN	Global Transportation Network
HAZMAT	hazardous material
HET	heavy equipment transporter
HHI	hand-held interrogator
HN	host nation
IBS	Integrated Booking System
ICODES	Integrated Computerized Deployment System
IED	improvised explosive device
IMCOM	Installation Management Command
IP	Internet Protocol
IPB	intelligence preparation of the battlefield
ITO	installation transportation officer
ITV	in-transit visibility
J4	Joint logistics staff directorate
JCS	Joint Chiefs of Staff
JDDOC	Joint Deployment and Distribution Operations Center
JFC	joint force commander

JFRG II	Joint Force Requirements Generator II
JI	joint inspection
JOPES	Joint Operation Planning and Execution System
JPEC	Joint Planning and Execution Community
JSCP	Joint Strategic Capabilities Plan
JTAV	joint total asset visibility
JTF	joint task force
JTF-PO	joint task force – port opening
LAD	latest arrival date
LAN	local area network
LMSR	large medium-speed roll-on/roll-off
LOC	line of communications
LOGCAP	Army Logistic Civil Augmentation Program
LOI	letter of instruction
MCT	movement control team
METL	mission-essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, and civil considerations
MHE	materiel handling equipment
MO	mobility officer
MOBCON	Mobilization Movement Control Automation System
MOG	maximum on ground
MOU	memorandum of understanding
MSC	Military Sealift Command
MSL	military shipping label
MWR	morale, welfare, and recreation
NCO	noncommissioned officer
N-Hour	notification hour
NTAT	not to accompany troops
OCONUS	outside the Continental United States
OEF	Operation Enduring Freedom
OEL	organization equipment list
OPLAN	operation plan
OPORD	operations order
PDK	portable deployment kit
POC	point of contact
POD	port of debarkation
POE	port of embarkation
POL	petroleum, oil, and lubricants
PPP	power projection platform
PSA	port support activity

RDD	required delivery date
RF	radio frequency
RFF	request for forces
RFID	radio frequency identification
RGATES	Remote Global Air Transportation Execution System
RLD	ready-to-load date
RO/RO	roll-on/roll-off
ROE	rules of engagement
RSOI	reception, staging, onward movement, and integration
SDDC	Surface Deployment and Distribution Command
SEDRE	sealift emergency deployment readiness exercise
SMS	Single Mobility System
SOP	standard operating procedures
SPM	single port manager
SPOD	seaport of debarkation
SPOE	seaport of embarkation
SRP	Soldier readiness processing
SSA	supply support activities
TAA	tactical assembly area
TAT	to accompany troops
TC-ACCIS	Transportation Coordinator-Automated Command and Control Information System
TC-AIMS II	Transportation Coordinators' Automated Information for Movement System II
TCC	transportation component command
TCMD	transportation control and movement document
TCN	transportation control number
TEA	Transportation Engineering Agency
TO	theater opening
TOE	table of organization and equipment
TPFDD	time-phased force and deployment data
TPS	Tactical Personnel System
TRADOC	United States Army Training and Doctrine Command
TSB	theater staging base
TSC	Theater Sustainment Command
TTB	transportation terminal battalion/brigade
TTP	tactics, techniques, and procedures
UDL	unit deployment list
UIC	unit identification code
ULN	unit line number
UMC	unit movement coordinator
UMD	unit movement data

UMO	unit movement officer
USAF	United States Air Force
USAR	United States Army Reserve
USCENTCOM	United States Central Command
USTRANSCOM	United States Transportation Command
WPS	Worldwide Port System

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FMI 3-35
15 June 2007
Expires: 15 June 2009

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